THE

JOURNAL OF GAS LIGHTING.

PUBLISHED MONTHLY.

No. 81, Vol. IV.] LONDON, OCTOBER 10, 1855. [Price 1s., In America 30 Cents.

TO GAS COMPANIES.

BOGHEAD CANNEL COAL.—This is the most highly bituminous coal known, and, therefore, peculiarly adapted for mixing with inferior coals in the Manufacture of Gas, for which purpose it is exclusively used. One ton of it yields 15,485 cubic feet of gas, according to Dr. Fyfe's experiments, and in actual working the produce is at least 13,500 feet of the specific gravity of ·775; and a burner, consuming at the rate of 1 cubic foot per hour, gives a light equal to 8½ spermaceti candles, each consuming 120 grains of sperm per hour. The light yielded by one ton of this coal is equal to that from 1990 lbs. of sperm candles; whereas that from the same quantity of Newcastle Caking Coal is only equal to 420 lbs.; and that from the best Wigan Cannel Coal is only 750 lbs. of sperm candles. It can be shipped at any of the ports in the Frith of Forth or the Clyde.

For terms and other particulars apply to

R. W. Kennard and Co.,
Sole Agents,
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FOR SALE,

A Station Meter, as good as new, to pass 8000 feet per hour, made in 1849, with Tell-tale Index and Bye-pass complete; now in work at the Cardiff Gas Works. Taken down to be replaced by a 20,000. Also a GOVERNOR that is in use in connection with the above Station Meter. Apply to John Vickary, Gas-meter, and General Gas Apparatus Works, Exeter.

TO GAS COMPANIES AND CONTRACTORS.

THE Peterborough Improvement AND CEMETERY ACT, 1850.

The Commissioners acting under the said act hereby give notice, that they are prepared to Contract with such Company or other person or persons who may be willing to light the several Streets, Highways, Public Passages, Courts, and other places of the Town of Peterborough within the limits of the said Act, for the time being, with well-purified Coal Gas, or such part thereof as may from time to time be so lit, within the limits of the said act, for the term of THREE YEARS; the lighting to commence on such day in August next as the Commissioners may direct, and terminate on the 30th day of April in every year during such Contract.

The terms of the Contract to be as follows:—

The Contractor, at his own expense, is to erect Gas Works, Machinery, and Apparatus of sufficient capacity, to find and lay the requisite mains and pipes, to provide, affix, and remove the lamp-posts and lamps where the Commissioners may from time to time order, and light the same, and be at liberty to take up and remove the whole at the end of the said term, if such Contract is not renewed.

Every lamp is to have a batwing burner, capable of consuming five cubic feet of well-purified Coal Gas per hour, when turned on to the full.

The Contractor to have power, at the hours to be stated in the deed of Contract, to break up the said streets and premises for the above purposes, and also for supplying gas to the Railway companies, and for other public and private consumption, and to make the same good again to the satisfaction of the Commissioners, subject to the penalties and forfeitures named in the said Act.

All matters in difference to be settled by two referees or their umpire, in the usual way.

The Contract and counterpart to be at the joint expense of the Commissioners and the Contractor.

The Commissioners now pay for 93 lamps, and will contract for not less than that number for 1800 hours of gaslight yearly, with power to require and pay for more lamps and gas at the like rate per lamp per hour.

The Commissioners are to be at liberty, by meters, pressure-guages, and any other means they please to test the quantity and quality of gas supplied from the mains and pipes, with power to inspect the works, and for all other like purposes, at all seasonable times. The amount of gas consumed by the Commissioners to be paid for half at the end of half the season, and the remainder within one month after the close of each season—the Commissioners to be entitled to deduct therefrom such sum and sums of money (if any) as may be agreed between both parties, or awarded to them by any arbitrators or their umpire. The Contractor, upon a total breach of Contract, to forfeit £1000 as liquidated damages; and upon such a breach as shall leave any street in the Town in darkness for one or more nights, to forfeit £5 for every night as such damages.

TENDERS, stating the charge for each lamp per season and per 1000 cubic feet of gas for the season, according to the above terms, with names, residences, and occupations of two sufficient sureties, to be sent under seal to the office of the Clerk to the Commissioners at Peterborough, on or before the 14th day of November next. The Commissioners are not pledged to accept the lowest, or any Tender.

By Order,
Nelson Wilkinson,
Clerk to the Commissioners.

Dated this 19th day of September, 1855.

COWEN'S PATENT FIRE CLAY RETORTS.

JOS. COWEN and CO.,

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Were the only parties to whom a Prize Medal was awarded at the Great Exhibition of 1851, for "Gas Retorts and other Objects in Fire Clay."

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Also, owners of Blaydon Burn Colliery, from which "Cowen's Cannel Coal," extensively used in Metropolitan and other Gas Works, and "Cowen's Garesfield Coal," are obtained. From the latter, "Cowen's Garesfield Coke" is made, the superior quality of which is well known.

Coal and Coke Office, Quay-side, Newcastle-on-Tyne.

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(*Successors to the late Samuel Crosley*),

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Beg most respectfully to announce that, in addition to the continued manufacture of GAS METERS, they manufacture Meters for measuring Water, Spirits, &c. (commenced under Patent, in 1849, by the late Mr. William Parkinson).

N.B. These Meters are as simple and durable as the Gas Meter, and as correct as that instrument under the most careful manipulation.

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LAP-WELDED FLUES FOR BOILERS.

GALVANIZED TUBES, SHEET-IRON, &c.

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12,950 CUBIC FEET OF GAS,

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Messrs. Lawrie and Co. are also Sole Agents for the excellent KNIGHTSWOOD CANNEL, used by London Companies, and are Makers of RETORTS, Clay and Iron; SOCKET PIPES; and all kinds of CASTINGS.

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Manufacturer of Patent Iron Tubing, Block Tin, Lead, and Composition Tubing. Cast-iron Gas and Water Pipes of all sizes, and every description of Gas Apparatus.

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DURHAM.

Manufactory for every description of Casting and Machinery for Gas Works and Water Works.

Warehouse in London for Cast-iron Pipes and Connections of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

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FOR SALE at the Gas Works, Old KENT ROAD, a few lengths of HYDRAULIC MAIN, 16 in. diameter, 4-in. DIP and H PIPES, and a few 7-in. VALVES. Also, about 30 LOTUS-SHAPED GLASS LANTERNS.

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NEW PELTON MAIN GAS COAL. Parties wanting a supply of these first-class GAS COALS, which are extensively used in the London and other gas works, will please to apply to Mr. James Joicey, Newcastle-upon-Tyne.

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FIRE-BRICKS of all descriptions. Manufactory established in 1801.

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April 27, 1854.

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begs with the utmost confidence to solicit the order of Gas Companies, and persons using or selling Gas Tubes. Having for a long period supplied the largest Gas Companies and Consumers in the United Kingdom and the Continent with unvarying approbation, and almost exclusively the Local Boards of Health under Government Engineers, with Galvanised Iron Tubes and Connections, it has become an inducement to make such facts known.

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Boiler Tubes, Core Bars, Hollow Spindles, and Hydraulic Press Pipes, to resist 3000 lb. to the square inch, made on the shortest notice.

The only Prize Medal of the Great Exhibition, 1851, awarded.

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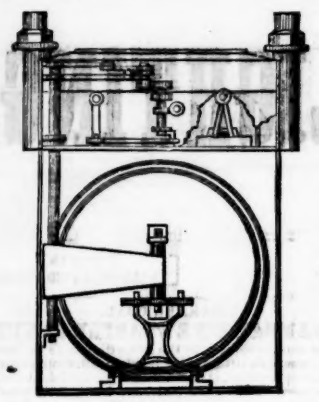
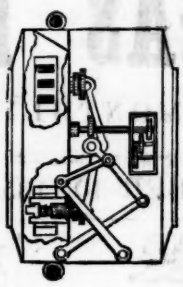
Station and Experimental Meters, Gas Pressure Registers, Gauges, Experimental Gasholders, Governors, Slide Valves, &c. &c.

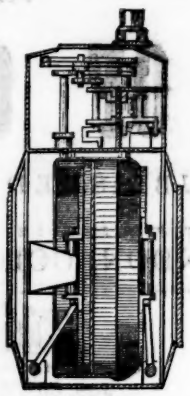
W. and G. would respectfully call the attention of Gas Engineers and Managers to their Station-meters, having made and erected the largest in use at the present time, two of which may be seen at the Stockport and Liverpool Gas Works, on application to the respective Engineers; also to the Paris Universal Exhibition, Class IV., Section 1, No. 262.



ELEVATION, with Front removed and Valve-box broken.



PLAN. Valve-box broken away to show Valves.



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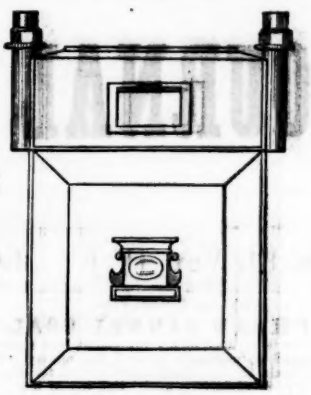

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begs to inform Gas Companies and Consumers that he has become the Proprietor of the above Patent; and that, having made arrangements for the Manufacture of the same on an extensive scale, he is prepared to supply all sizes in any quantities.

The advantages of this Meter have been recognised by the highest authorities, and those who have tested and used them.

The most obvious improvements are—

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These Meters, and also the Patent Lever Valve Wet Meters can have either the Common Index or Patent Indicator attached; and are manufactured, with Station Meters, Governors, Pressure Registers, Gauges, Gas Fittings, and every description of Gas Apparatus, at the Works, Great Peter-street, WESTMINSTER.

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Apparatus, including Graduated Tube and Equalising Cylinder, £1. 1s.

Bromine, 3s. per ounce.

AN APPARATUS for TESTING the PRESENCE of BISULPHURET of CARBON in GAS.

It has frequently been remarked by chemists that even when the acetate of lead test is applied to coal gas, and indicates perfect freedom from sulphuretted hydrogen, indications are still given during its combustion which would lead to the supposition that some other compound of sulphur exists in it. The above instrument affords positive proof that this is the case, and leaves little doubt that that compound is sulphuret of carbon. This test will detect the presence of sulphur in whatever form it may exist, and is much more delicate than the acetate of lead test, even for sulphuretted hydrogen.

Cost of Apparatus, £2. 2s.

A REGISTERING PRESSURE GAUGE.

It is important to Gas Companies to know the pressure at various parts of their districts during the successive hours of the night, for the better regulation of their initial pressure at the Works. This compact apparatus, capable of being placed in a space of about one foot cube, is intended to supply this information.

Net Prices—3-inch Scale, £7. 5-inch Scale, £8. Glass Shades, 10s. extra.

STATION METERS, PRESSURE GAUGES, PHOTOMETERS, SPECIFIC GRAVITY APPARATUS, &C.

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TO CORRESPONDENTS.

Fair Play.—*"The reason why" the closed doors, within which the half-yearly meetings of the Imperial Gas Company are held, have never been forced, is disclosed in the recent report of Mr. Taunton to the Gas Committee of the Liverpool Town Council, wherein it is stated that this company is "now purchasing extensively dry meters." Provincial companies are threatened with being shown up by these gentry, unless they "make things pleasant" by following the example of the Imperial Company.*

J. T. and Others.—*The specification of Basford's patent for the manufacture and purification of gas is not due till Nov. 3; and, in the mean time, no information is allowed to transpire with regard to the process. Several parties have visited the establishment near Swansea, where it is stated to be in operation, but the results obtained are by no means either satisfactory or conclusive.*

A London Shareholder.—*The gentlemanly style of the letters published under the signature of* "One who has Studied the Interests of the (London) Company," *has induced the belief in some quarters that they originate with the able and energetic secretary of "the largest and best-conducted gas company of the country;" but, although we apprehend the rumour is without foundation, we have good reason for believing that a negotiation for the settlement of all differences between these bodies, founded upon an exchange of districts, has failed, from the exigency of the stronger body in requiring the lion's share.*

Gas Rate.—*The Act of 3rd and 4th William IV., cap. 90, enables any parish in England to raise a rate for lighting the public thoroughfares with gas, and for erecting lamp posts, &c. Its provisions are very precise and stringent, and require to be carefully studied before the machinery for its adoption is set in operation. See the case in the Queen's Bench,* "The Queen *v* Warblington," *reported at page* 316, *Vol. III., of this* Journal.

NOTICES.

Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

The Journal of Gas Lighting has been duly registered at the General Post Office for transmission abroad.

Communications and orders for Advertisements to be addressed to the Editor, No. 3, Parliament-street, Westminster.

Notice to Subscribers.

We some months since announced that we had under consideration a project for the conversion of this Journal into a bi-monthly publication of 16 pages, whenever it appeared to us that materials could be depended upon for such an extension. The numerous supplements and enlarged numbers we have from time to time been compelled to give to keep up with the accumulation of matter, satisfies us that the time is approaching for carrying our project into effect, and we have consequently resolved to commence the new issue in January next, when the subscriptions for the current year will have expired. In making this announcement, we cannot refrain from expressing our gratitude for the favour with which our exertions to establish an independent organ for the circulation of information interesting to an important branch of our national industry has been received, and we pledge ourselves to spare no exertion or expense to render it worthy of the extensive support and confidence it enjoys.

Circular to Gas Companies.

The period is close at hand for giving notices of intended applications to Parliament during the session of 1856 for the incorporation of joint-stock companies, and we again urge upon unincorporated gas companies and private owners of gas-works the advantage of obtaining statutory powers for carrying on their operations, as some protection against the pressure brought to bear on them by local bodies whenever an opportunity offers for wringing some concession from their fears. The vicious system of supplying public lights at less than the prime cost, has been, to a considerable extent, fostered by the irregular manner and uncertain tenure upon which many parties have invested their capital in gas-works, and who, to save a portion of their property from confiscation, which would have been the result of competition, have from time to time submitted to exactions repugnant alike to the sound principles by which commercial transactions should be regulated, and to common sense. Instances come before us every day of sacrifices thus made, which a few hundred pounds invested in obtaining acts of incorporation would have prevented; and each successive year increases the severity of the conditions imposed on applicants for gas acts. A maximum price, which may be deemed by the legislature to be reasonable this year, may not be so considered next; and hence those who delay taking the requisite steps for strengthening their position this year, may find the obstacles greater in succeeding years.

The inquiry into the state of the gas supply in Liverpool has terminated, and we apprehend the committee will now see the error they fall into at the commencement of their proceedings, by seeking the advice of Mr. Clegg and Mr. Flintoff, *the engineer and secretary of a defunct rival company*, instead of at once applying themselves to the *bond fide* complaints of the citizens and consumers with which they have terminated their investigation. These latter are of the usual character where it is sought to make out a case against a gas company; and it is surprising that so few out of 27,000 consumers have reason to be dissatisfied with the manner in which they are served. There is nothing in the complaints approaching the great Tallis case, where upwards of 600,000 feet of gas was in dispute, nor anything out of the usual range of the experience of gas companies; and we have no doubt almost every in-

stance of excessive consumption will be satisfactorily explained whenever the Liverpool Gas Company has an opportunity of so doing. The committee was expected to have made its report to the town council, at its meeting on the 4th instant, but it is understood they have not been able to agree, and that the report will not be made till the council meeting of next month.

By referring to another part of our columns, in which we publish the report of Mr. Taunton upon the state of the Liverpool gas meters, it will be seen that the inflated outcry which has for some time startled that town from its propriety is rapidly subsiding. As we have for several months predicted this result, its approach scarcely necessitates, on our part, more than a passing notice; and therefore we might now very consistently allow Mr. Taunton and his report to find their way without farther comment to that "silent bourne" which must become the terminus of all similar jobs. Mr. Taunton, like an occasional pawn upon the chess-board, has come to occupy by force of accident a kind of position that looks like importance, and his late employers have endeavoured to act as if appearances were realities, fully alive to the mistake we long ago warned the gas consumers of Liverpool that their "idol of brass" stood upon "feet of clay," and of this fact Mr. Taunton's report is a sufficing demonstration.

Remembering the good old motto, "*audi alteram partem*," this one-sided report carries its own unmeaningness with it; for when all comes to all, it appears that the "fast" and the "slow" meters of the Liverpool Gas Company are about in the ratio of six to half-a-dozen; and therefore Mr. Taunton's suggestion for the appointment of a meter-inspector will, so far as the Gas Company and the gas consumers at large are concerned, leave matters very much as they were. He seems exceedingly sore upon the doubts thrown over his impartiality, and wishes every one to take for granted that all he utters is strictly true; but Mr. Taunton, like any other man, may make a mistake, we presume, and in all honesty assert that which may prove incorrect. Nor do we see what his appointment by the Corporation of London has to do with the matter of favouring either "wet" or "dry" meters: though appointed by the corporation, he is paid by the Great Central Company; and he will forgive us for saying, that no matter who appoints to an office, the individual appointed is the servant of him who pays. Neither is it necessary to prove things which prove themselves—there are axioms in morals as well as in mathematics. Mr. Taunton, though so extremely sensitive, is not himself wholly free from a charge of suggestive insinuation, that detracts materially from his claim to impartiality. After asserting (with what truth we know not), that Mr. King had refused to allow him to test certain dry gas-meters, he certainly goes out of his way when he tells the committee to form its opinion from this refusal. Admitting that Mr. King had refused, how could the committee know the real grounds of that refusal? Indeed it does not appear clear that there are any dry meters in use. Why, then, were they to draw, like Mr. Taunton, an uncharitable conclusion? As to Mr. Taunton's reference to the case of butchers, bakers, &c., there is no analogy whatever: a gas consumer takes as much or as little of the article as he wants, unseen by and unknown to the vendor; whereas the butcher, &c., is himself the arbitrator, and not unfrequently sells his meat by the lump or piece, and without any weights or measures at all.

DR. WALLER LEWIS'S REPORT UPON THE FRENCH LAWS AND ORDONNANCES FOR THE REGULATION OF NOXIOUS TRADES AND OCCUPATIONS.

We have lately witnessed a careful and severe examination of the candidates for the civil service of the East India Company, and the results of this experiment have given rise to a considerable amount of discussion amongst the enlightened members of the Press. Opinions differ, of course, as to the precise form of examination to be adopted; but, with only one marked exception, the representatives of the intellect of the country have agreed that it is essential that the persons admitted to public offices should be men of considerable education and acquirements. The exception to which we alluded is the *Globe*, a journal usually believed to be influenced by Lord Palmerston; and latterly it has inserted some "leaders," evidently written for the purpose of expressing the opinion of "the powers that be," that educated talent is not required of necessity in the governing class. Lord Palmerston's choices of public servants, it is true, have hitherto been guided by the principle that the want of common education is no bar to the employment of his *protégés* in office; yet there is a curious coincidence in the *Globe's* apology for ignorance with the publication of Dr. Waller Lewis's Report, to which it may we worth while to call attention.

This report, we do not hesitate to say, is the most disgraceful publication which has ever issued from that notorious manufacture of trashy and ill-written documents, the General Board of Health. It is, at best, nothing but a translation from a series of laws, ordonnances, and reports, obtained, it seems, through the costly intervention of our ambassador at Paris, all of which could have been procured from any of the foreign booksellers in London, such as Dulau, Baillère, Barthès, Rolandi, or Jeffs, at half the cost the nation will now have to pay; and nearly all of which we ourselves would have been glad to communicate to the representatives of the Government, for we have possessed them for years. In an article inserted in this Journal (April, 1855, page 61), we gave a concise statement of the French law on this subject; and, even after a perusal of the large and very *blue* book by Dr. Lewis, we refer to our own summary, as conveying a distinct view of at least all the general principles involved in the question in a far more intelligible form than the one he has presented. Dr. Lewis, however, was not bound to be concise; on the contrary, the bigger the book he produced the less chance was there of its being read, and the more he would be entitled to charge for it. So the English nation has been put to the expense of a full translation of all the documents sent by our ambassador; and a subject which, when treated without originality, and merely as a report on the proceedings of other countries, ought hardly to have required a pamphlet, has been swelled into an octavo volume of 125 pages. The affection for paste and scissors Mr. Chadwick instilled into the writers of the Board of Health still survives his *ostensible* absence. It is unfortunate that Mr. Chadwick's successors and puppets do not insist—as he was forced to do in his latter days of office—that the principal *employés*, chosen because they were neither eminent by their education nor by their professional reputation, should, at any rate, have in their service some persons who could write English, if even they were compelled to write nonsense.

Dr. Lewis's report, we have strong reasons to believe, was written in one of the translation offices of Paris: the Doctor himself never could have indicted so marvellous a collection of mistakes in grammar, in composition, and even in nomenclature. It would be impossible to find one single page in the whole volume produced, be it observed deliberately, and at the expense of the nation, which does not positively abound either with mistakes in grammar of a nature to raise a blush on the cheek of any national school boy of thirteen years of age, or with others inexcusable on the part of a man nominated by the Government to investigate an important subject. The various departments of the Administration which have countenanced this most rediculous publication, must, to a certain extent, be held responsible for the profound ignorance of both the English and the French languages which it displays, as well as of the nature and forms of the French Administration we are recommended to adopt. They may be less directly responsible for the philosophical errors, because it is notorious that our government officers are ignorant of most of the subjects which form the basis of ordinary professional, or mechanical education; but it is unaccountable that even Lord Palmerston should not have felt himself compelled to refer a work so badly written as Dr. Lewis's report to some competent authority before issuing it as a "feeler" for an extension of his patronage. A document, so abounding in verbal errors, we should have thought would have induced even his flippant lordship to pause ere he compromised himself by adopting the recommendations it contained, or even by allowing the government organs to proclaim it to be very "valuable."

We will take a few illustrations of the Mrs. Malaprop language to be found in the first two pages of the report—a document, we suspect, it is intended to appeal to in order to justify the adoption of administrative measures which would effect a revolution in the social and commercial relations of the country.

In the second paragraph, and indeed throughout the whole volume, Dr. Lewis adopts the French word, administration, to express what in England is usually called the central government. Is this Gallicism adopted purposely? We suspect that it is, and that it has been so adopted in order to avoid running

counter to our well-founded antipathy to any centralisation of the attributions of municipal administration in the hands of a virtually irresponsible government board. Passing over this verbal criticism, and the clerical error in the insertion of a comma between the two names of M. Guyton Morveau, we call attention to the construction of the last paragraph of page 7. It stands thus:—"All dangerous, insalubrious, and *inconvenient* establishments are divided into three classes, and before they are permitted to be carried on," &c. Now the first dictionary meaning for the French word "*incommode*" may be inconvenient, but it does not, in the original report, bear the sense any Englishman would apply to Dr. Lewis's translation. "An inconvenient establishment" we hold to mean one which is not convenient for the purposes for which it was designed. The French phrase, "*établissement incommode*," implies that the place is a nuisance to the neighbourhood; so that it would have been more correct to have translated the sentence in the French report by "All dangerous, insalubrious, or *offensive* establishments," than to have used the words of the "valuable" document. Again, Dr. Lewis has modified the original text of M. Tardieu's article in the "Dictionnaire d'Hygiène," which is as follows:—"*et l'on exige pour leur exploitation des autorisations*," &c., and has stated that "before they (*i.e.*, the dangerous, &c., establishments) are permitted to be carried on," &c. Now any school boy, we should have thought, would have known better than to talk of "carrying on an establishment." A business or a trade is carried on *in* an establishment; the latter is not itself carried on.

At page 8, lines 3 and 4, we read, "To the authorities belong the duty"—a bad and ungrammatical translation of the phrase, "*C'est à l'autorité qu'il appartient.*" At line 7, we read, "The demand for *authority*:" it should be, "for authorisation." At line 9, it would have been better to have used "or" instead of "and;" to have said, in fact, or "to the Prefect of Police for the jurisdiction of the Prefecture de la Seine," which is the real meaning of the original. At line 11, Dr. Lewis translates the words, "*les rapports de l'établissement*," by "the connections of the proposed works," instead of by "the relative positions," which express the sense of the French phrase more correctly; for this does not mean that there is any necessary connection with the surrounding lands or houses. At line 19, Dr. Lewis has closely followed a very badly worded phrase in M. Tardieu's Dictionnaire, for he literally translates the phrase, "*Cette enquête, redigée par les maires*," &c., instead of inserting the words, "*the report* of this inquiry, drawn up by the mayors," &c. At line 28, Dr. Lewis translates "*puis*" by "when;" he should have used "subsequently" or "afterwards;" or, if he wished to translate literally, "then." In the description of the factories in the second class, Dr. Lewis translates M. Tardieu thus:—"The establishments of the second class are those which do not rigorously require their being kept at a distance from habitations," &c.; he means those "which it is not necessaey to keep at a distance;" because it is absurd to suppose that the establishments themselves *require* any thing at all in the matter. Then, at the end of this paragraph, he uses the awkward Gallicism, "It is the prefects who," &c.: why not have said simply that "the prefects, after consultation," &c.?

Now we may, perhaps, dwell too much on some of the above verbal errors; but we assert that every page in the book would furnish at least an equal collection, and that some of them are even of a nature to convey a meaning precisely the reverse of that contained in the text, whilst others are simply ridiculous. Of the latter class, we may cite the translation of "*bitume en planches*" (page 12, Dr. Lewis's: Tardieu, vol. i., page 549, edition 1852) by "bitumen, manufacture of," instead of "Bitumen, conversion into slabs;" for bitumen, being a natural production, cannot be manufactured, nor does Tardieu say anything of the kind. Page 13, Dr. Lewis translates "*four à chaux*" lime *pits*, instead of lime *kilns*. Page 15, he translates "*blanc d'Espagne*" by "Spanish white," instead of "whiting." "*Buanderies*" he translates, pages 13 and 16, by laundries, whereas that word only applies to the washhouses in which foul linen is boiled, and the word *lavoirs* expresses what we call a laundry. He translates the term "*garçon boucher*" butcher's boy, instead of a journeyman butcher; the "*échaudoirs*" he calls scalding-houses, when speaking of the abattoirs, instead of slaughter-houses; the cattle-sheds or "layers" he calls "*bouveries*," without any attempt at translation. Of the former class of mistranslations, we refer, as the first illustration at hand, to the paragraph headed "Health," page 19, in which M. Lombard is made to contradict himself in a most ludicrous manner, in consequence of the utter ignorance of the translator of both the English and French languages. Surely at the present day we are entitled to expect that books published at the expense of the nation should be written in a style at least to save them from derision and contempt on the score of their author's deficiency in primary education.

But we object to Dr. Lewis's report, and to the whole system he advocates, on far broader principles than those involved in the grammatical construction of his sentences. As we said in our article of April last, the danger of the French system consists in the gradual substitution of the governmental superintendence for the exercise of individual liberty and responsibility. The French nation, and generally the nations of Southern Europe who retain strong traces of the Roman organisation and laws, have at all times avoided the difficult and arduous task of self-government, and thrown upon their rulers the discharge of many duties of self-protection which the more independent German races preferred fulfilling for themselves. Politicians of the Palmerston school ignore these indications of a peculiar automonia in every nation; but it is nevertheless the fact that, for a legislation upon any subject to be successful, it must be based upon the habits, the feelings, the wants, and even, to a certain extent, upon the prejudices, of the people to whom it is to be applied. The study of all these conditions requires long and careful consideration, and to be conducted with a conscientious desire to arrive at truth. Unfortunately, our recent lawmongers are deficient in the qualities required in such cases, and they have found it more easy to substitute clap-trap assertions and unmeaning formulæ for solid arguments; to copy blindly the systems of other people than to discover those adapted to the nation unfortunate enough to be at their mercy. So, in the present instance, Dr. Lewis, finding that in France the police meddle with every detail of manufacturing processes, recommends, by implication, "an active supervision by means of a department of the police;" and, as Lord Palmerston's Smoke Abatement Act "has introduced the small end of the wedge" of such a system, it would not be surprising if, in the next session of Parliament, an attempt were made to organise something of the kind. The London manufacturers already know the vexatory nature of a police inspection, and how utterly useless it is for any practical purpose, because it is a farce to send men, receiving perhaps a guinea or thirty shillings a week, to inspect large manufacturing establishments. The extension of the system would only increase the annoyance and the bribery. If the scientific branch of the service be entrusted to men like Dr. Lewis, there is, we fear, still less hope of any good being effected. We are prepared to admit that the unexampled increase in the numbers of our urban population requires that something should be done to protect those who cannot protect themselves. This end, however, will not be effected by blindly copying the French, or by endeavouring (if we may be allowed to use the phrase) to make the central government a species of providence for the poor. Imitations invariably degenerate into caricatures; and, unless we have read the events of the late European revolutions ill, much of the fearful uncertainty which still overshadows the fate of the governments of Western Europe is to be attributed to their needless interference in private affairs. The object of all government is to secure the greatest amount of happiness to the greatest number. We hold, and we believe that recent events confirm the justice of our position, that this object is attained the most surely by leaving people as free, and as unshackled as possible, in the exercise of their intellect and industry, and by furnishing them with easy means of legally protecting themselves. No government can forsee, or provide for, the infinite number of cases where it may justly or unjustly appear to suffering parties that they have a right to complain; and they who undertake to right the wrongs of everybody must expect to be made answerable for many evils they can never control. In the meanwhile, the governments which intermeddle with private affairs will be found to have destroyed independence of character—the most essential element of industrial or any other success.

One of the evils of the French system of centralised administration is to be found in the continually widening sphere of its interference with the details of ordinary life. Latterly, not contented with drawing up long reports and propounding laws

and ordonnances with respect to the "*Altérations et Falsifications des Substances alimentaires*," the Government of Louis Napoleon has felt called upon to take measures to prevent the contamination of the mental food of the nation. Books sold by pedlars are now required to be approved by the Minister of the Interior; and a work with respect to their composition, full of humour and odd information, by M. C. Nisard, the secretary of the commission named for the purpose of examining the almanacs and other trash distributed in the provinces of France, was published last year. This work is a strange commentary upon Dr. Hassall's attempts to get up an excitement with respect to the adulteration of food; and really, if it be requisite for the State to protect us against our bakers and grocers, there can be no reason why it should not extend its fatherly care to our transactions with the booksellers, or the merchants of skins and furs. We recommend Messrs. Knight and Nicholay to ponder on these things.

Our notice of Dr. Lewis's report has grown so under our hands, that we are obliged to defer to a future occasion the examination of the doctrines in the so-called philosophical or scientific portion. We can only say at present, that these are as contemptible, where anything original has been attempted, as the style of composition. But we cannot conclude without expressing our bitter regret that our respected contemporary, the *Times*, usually so judicious and so wonderfully well informed, should have inserted an article, no doubt furnished by the Government, in which Dr. Lewis's trashy report is called, with all the weight and influence of the "Thunderer," a very valuable report. For itself, it is beneath contempt: we are compelled to waste time and space upon it because it is an indication of the tendencies of the existing Government.

AN OLD SCHEME REVIVED.

It might reasonably have been supposed that the long-continued turmoil about supplying Paris with gas, would have been effectually set at rest by the renewed concession to the existing companies; and that no more gas bubbles would have been blown in that city for many years to come. But tranquillity is unnatural to speculators; and their restless activity has, even under the unpropitious circumstances of a final settlement of the question, concocted a scheme so fascinatingly delusive, that its success in gulling the public must have exceeded their most sanguine expectations. So far from the renewed concession having proved a check to their operations, it has mainly contributed to their success; for the concoctors of the scheme so artfully contrived their plan as to give it the semblance of having emanated from the gas companies to whom the concession has been granted. It was a condition of the new grant, that the six existing companies should be amalgamated into one; and it was well known that measures for effecting this "fusion," as it was called, were in progress. Under these ciscumstances, there appeared on the Paris Bourse, the prospectus of a company promising immense advantages to the shareholders, and entitled "*l'Union des Gaz*." Misled by the name, supposing *l'Union des Gaz* to be the amalgamated company, the petty jobbers who swarm on the Paris Bourse, eagerly rushed to participate in a concern which they imagined to possess a monopoly of the supply of gas for fifty years, and the whole of the shares were taken, and at a premium of 100 per cent., before the public were aware of the real position of affairs. When it came to be known that the gas companies of Paris had no connection with the *Union des Gaz*, shares fell to 40 per cent. premium; but there was time enough for the more knowing purchasers to sell out at the higher rate, leaving the dupes to contemplate, at leisure, the prospect of regaining their money from the working of the scheme that promised such lucrative returns.

The most extraordinary part of the affair is that there has been actually paid up £5 per share on the 40,000 shares of the company; so that "*l'Union des Gaz*" starts into operation with a real capital of £200,000, which it is proposed to expend in attempting to carry into operation an impracticable scheme that has been long ago tried in this country and abandoned as worthless. The object of the company, as stated in its prospectus, is, "to take advantage of the gases lost in the manufacture of coke, and to apply them to the lighting of towns, the gas being considered only as a secondary product. It differs in this from the existing gas companies, which, on the contrary, consider the gas as the principal product, and the coke as secondary." It appears, therefore, that the company is to be established for the manufacture of coke, and not of gas, as its title implies; the gases which ordinarily escape in manufacturing coke for railway traction being collected and rendered available for heating retorts in which coal is to be distilled, so that it is supposed it will cost little or nothing. It is also assumed that by transferring the seats of coke manufacture from the coal mines to the neighbourhoods of populous towns connected by railways, a more ready market will be found for the coke, at the same time that the gas collected may be advantageously employed. All the calculations are founded on the assumption of an unbounded demand for coke; more especially as the quality produced by the company's process would not be ordinary light gas-coke, but of the solid metallic kind fitted for railway traction. It is well known that the quality of coke is materially affected by the process of carbonising, and that when a large quantity of coal is contained in a retort and exposed to a low heat, the weight of the mass solidifies it, and tends to give it the structure and peculiar metallic lustre that is desired for railway purposes. It is proposed, therefore, by the projectors of *l'Union des Gaz* to operate in that manner, the distillation of the coal being carried on in large ovens, the waste heat from which is applied afterwards to heat retorts in which coal is to be distilled for the production of gas. This plan, though apparently feasible, is open to many practical objections. In the first place, the waste heat is at the best insufficient to effect the distillation in the requisite time, as by this process eight or twelve hours is required for the distillation, instead of four; and the gas produced is consequently small in quantity and inferior in quality, with a large increase in the quantity of tar. In the next place, the heat thus obtained is extremely variable, for the retorts are cooled down when the oven is newly charged, till they cease to generate gas. To obviate this inconvenience, two or three ovens must be adapted to each bed of retorts, which involves the conversion of ten times the quantity of coal into coke in the ovens, beyond the quantity of coal distilled for gas. Were this system to be adopted in London, the present annual consumption of 550,000 tons of coal for gas-making would be augmented to 5,500,000 tons, converted into oven coke; the total quantity of coal consumed for all purposes in London and the district supplied by it being only 3,500,000 tons per annum. Many gas companies in England, in the origin of gas-lighting, had their ovens constructed on that principle; but it has been altogether abandoned, as no outlet could be found for the enormous quantity of coke produced.

Another point which the concoctors of *l'Union des Gaz* company have left out of consideration is, the quality of the coal on which their operations are to be conducted; for they assume that any kind of coal will answer their purpose. Though the quality of the coke may, indeed, be materially determined by the process of distillation, yet much also depends on the quantity of solid carbon in the coal compared with its volatile ingredients. The heavy coke with a metallic lustre could not be produced by the best gas-making coal under whatever circumstances it was distilled, and it is equally impossible to extract a large quantity of good illuminating gas from the coal best fitted for making solid coke. The processes of making gas and of making coke, though intimately associated, are nevertheless distinct. The better the gas, the worse will be the coke; and it is next to impossible to produce, by the same process, coke and gas of the best qualities. When, indeed, the distillation of coal is conducted at the slow rate most favourable to the production of solid coke, the gas evolved possesses inferior illuminating power.

We are fully aware how difficult it is to convince those who have embarked in a wild speculation of their folly; they persist in hoping, against hope, that there are special circumstances in their case which will reverse the usual course of human occurrences in their favour. It may be so with the shareholders of *l'Union des Gaz;* they may imagine that, though their scheme has been tried and abandoned, and though the advantages contemplated cannot possibly be realised by known processes, yet that the circumstances of the present time are more favourable for its development; and that among the many clever things stated in the prospectus to have been done by M. Omer Salmon, whose name appears at the head of the company, he may have overcome what to others seem to be physical impossibilities. Whether M. Omer Salmon be capable of fulfilling such expectations we have no means of knowing, as the world is yet ignorant of his achievements; and perhaps the most favourable thing that can be said

of him under the circumstances is, that his antecedents are unknown. It is not so, however, with some of the Parisian gas speculators, one of whom has gained unenviable notoriety in connection with the peat-gas delusion, and is now suffering in prison for his conduct in that affair. These are not the kind of men to work out successfully the difficult problem which the originators of *l'Union des Gaz* have undertaken to solve, nor are they the persons best adapted to manage profitably for the shareholders the £200,000 of paid-up capital placed in their hands. If the result should prove a total loss, the shareholders will scarcely deserve sympathy, for they have invested their money in the concern despite of a caution given by the projectors of the company themselves, who, with unparalleled assurance, commence their prospectus with this announcement:—"Many new companies are formed on bases which, if not fictitious, are at least hazardous, and do not allow the capitalist to appreciate beforehand the merit of the undertaking in which he embarks; and thus he exposes himself to the entire loss of the sum he had invested for the purpose of increasing the amount of his income." The prospectus speaks like an oracle, and we have little doubt that ere long the shareholders in the company of *l'Union des Gaz* will experience its complete verification.

THE SANITARY QUESTION.

From the undeniably honest and unprejudiced view we have all along taken with regard to the so-called sanitary question, it is not without satisfaction that we notice a daily increasing number of converts to the physiolygical principles we have hitherto done our best to inculcate. We have maintained, as our readers are aware, that a bad smell is not necessarily an unhealthy one, and that the most disgusting nuisances are quite compatible with the prevalence of good health in the localities where they exist. To enact legislative measures for the suppression of such nuisances or smells, upon the plea that they were injurious to the public health, we have therefore condemned as unwise and dishonest:— dishonest because opposed to the recognised facts of the case, and unwise because dishonest, and certain to create a reaction. We have consequently advised the removal of such nuisances upon other and more equitable grounds; let them be bought up at the valuation of a competent jury. Great endeavours have been made of late to bring the system of decision by jury into contempt, and no opportunity has been lost sight of by our ministerial place-makers of superseding this palladium of national liberty; but if the British public remains true to its own interest, these attempts, like the manœuvres they are intended to support, will end in defeat. Our jury system may have, and like everything human, no doubt has its defects; but where is the system that is perfect? or where are we to find one less liable to corrupt inflnences?—certainly not in the ministerially appointed official, whose very existence hangs upon the nod of a first minister. No, by Magna Charta, we have risen into a nation of free men, and we are bound to transmit the same means of maintaining that freedom to our descendants. Away, then, with all efforts to restrict the judicial character of the nation: we require no legal measures which are beyond the range of sound common sense. If twelve honest men, being duly instructed, cannot arrive at a satisfactory decision, still less may we hope for justice at the hands of but one, of dubious honesty. As to the arguments relating to expense, we have yet to learn that trial by jury is more costly than other forms of legal litigation; yet, if it happens to be so, this does not arise from the expense of the jury, but of the harpies who live by creating verbal smoke with a view to obscure the perception of justice. Simplify, or if we may use the expression, disinfect trial by jury, but let it not be superseded.

As a proof of the correctness of this advice, look at the present state of the sanitary question:—apart from the few mercenaries engaged in carrying out their own ends, who believes one word about the choleraic tendancy of bad smells? Not a single creature, and for the simple reason that there were bad smells before cholera was known; and we not only find bad smells unaccompanied by cholera, but cholera unaccompanied by bad smells. It would be just as wise to argue, that a foul sewer in Fleet Street caused the failure of a potatoe crop in Connaught, as that the cholera has any connection with any particular odour whatever. The most obnoxious gas contained in sewers is sulphuretted hydrogen; yet have we not Harrogate, Moffat, Aix-la-Chapelle, and many other places to which invalids are daily sent for the restoration of their health, because at these places the air and the water are impregnated with sulphuretted hydrogen gas—the first of which is inhaled, and the latter bathed in and even drank, by the invalids? In short, the subject will not bear a moment's examination; and my Lord Palmerston's "physic-made-easy" or "nosey" plan of jobbing our civic sewage, is clearly destined to undergo that very putrefactive fermentation which it so much abhors. Neither his lordship's shifty eloquence, nor the "blue-book" bamboozlements of Mr. Chadwick, nor the wall-eyed equity of Sir Benjamin Hall, can prevent the steady advance of scientific truth. Like the approach of the French upon the Malakhoff, its progress can be resisted neither by the stolid ignorance of an ass nor the astute cunning of a practised courtier, as is now becoming very evident.

Few of our readers, we imagine, have ever visited that region of horrors, which, under the enticing cognomen, "Belle Isle," cuts so respectable a figure upon that part of the map of London lying to the north of King's Cross. We do not recommend a visit to the spot, but will endeavour to describe it. Having walked up Maiden Lane a considerable distance, until beyond the point where the North London railway passes over the road, we soon find ourselves assailed by an odour of a novel and overwhelming kind, which causes an immediate elevation of the head for the purpose (quite vain) of obtaining a little air fit to breathe. This movement, though nugatory, has yet the effect of bringing the sight within the level of a gaudy sign, which intimates that the owner thereof is "Horse slaughterer to the Queen," and, as a matter of course, the Corypheus to the whole tribe of metropolitan "knackers," who are here located together upon principles of the well-known adage. It is by no means easy to procure an insight into the disgusting details of this equine form of butchery; and we venture to say, without fear of contradiction, that no man by whom they have been witnessed has ever left the spot without sensibly recognising the fact that his opinion of human nature was much changed for the worse. The poor animals that have worn out their strength in the service of man are here kept, like Ulysses and his companions, in the cave of Polyphemus, to be slaughtered when convenient. They stand almost up to the knees in the blood and offal of their previous comrades, waiting their turn, and are fed—no, not fed, but kept partially alive—by the merest modicum of food which will sustain the action of the heart, and thus interdict putrefaction. Scattered around are the "*disjecta membra*" of death—skeletons and bones in various states of disintegration—skins, hoofs, and offal of flesh (fat there is none) in every conceivable condition of decay; and far off in some dark nook, gleams a lurid light through a hazy atmosphere of fœtid steam, which a closer inspection proves to arise from a furnace and caldron where the flesh of the horse is cooked into what is called "cats'-meat," which is then thrown up in heaps ready for sale. The hideous panorama thus becomes complete in itself: the living horse, the dead one, the skeleton, the offal, and the cat's-meat, all present themselves to the eye at the same moment; whilst the olfactory nerve, having become providentially paralysed, no longer reveals the disgusting character of the aërial matters drawn into the lungs. If it be possible that any act of man can bring down the wrath of Heaven in form of a pestilence, this must be the place where it would first alight. The filth defies description, the stench surpasses the wildest conceptions of the imagination —yet strange! most passing strange! but most true it is, that the individuals employed in this kind of work are models of health and manly vigour; typhus, cholera, influenza, and other forms of epidemic disease are almost unknown at Belle Isle; and in spite of the anxious and very natural wish of the householders in the neighbourhood to transport this nuisance to some less populous locality; yet no evidence can be obtained at all tending to prove its insalubrity, so as to bring it within the scope of the Nuisances Removal Act—an act based, as we have shown, upon falsehood and misrepresentation, and consequently powerless for every good purpose.

It is to be hoped that my Lord Palmerston and his flexible coadjutators will discover in the above fact, the inconvenience of bolstering up a dogmatism by untruth; at all events, it must prove to them that the science of medicine extends beyond the limits of nose-ology, and that medical men are not destitute of either honour or honesty, even when self-interest occupies one side of the balance. The *Times*, which, as is well known, generally "jumps Jim Crow" upon every ques-

tion, and winds up with a long "leader" of self-praise for consistency, appears now to be approaching the sanitary neutral point, or nuisance zero; and hence its "impartial" editor has made room for the following very significant letter, the author of which, though influenced in an opposite direction "by every motive of personal interest," has evidently too much honesty to go "the whole hog" at the expense of his professional honour.

THE BELLE ISLE NUISANCES.

TO THE EDITOR OF THE "TIMES."

"Sir,—A letter in your valuable journal on Monday last, signed "A Hemingford Cottager," affords me an opportunity of laying before the public the difficulties which have hitherto hindered the removal of the abovenamed nuisances, and enables me to exonerate myself from the charge of countenancing such abominations.

"Seven years ago I was appointed medical officer to the district in which Belle Isle is situated, and about that time the Nuisances Removal Act was brought into operation. This act was hailed with delight, as the public hoped by its influence to remove the many nuisances which had existed for years in London and its vicinity; and I was pleased to have an opportunity of certifying to the necessity of their removal. Then came the difficulty. It was not enough to assert that the nuisances were prejudicial to health.

"When summoned before the magistrate, I was expected to prove on oath that disease existed in the locality; and, unfortunately, neither my case-book nor house-to-house visitation would bear me out on this point. The inhabitants, whether employed in the manufactories or otherwise, enjoyed good health; cholera had not been there, and no epidemic prevailed. One of the medical officers from the General Board of Health visited Belle Isle with me last year, during the prevalence of cholera, in consequence of an application from the inhabitants of Camden Town, &c. He was as surprised as I have always been at the healthy appearance of the residents. He particularly observed the cleanliness of the horse-slaughtering premises and factories; and, although he was equally disgusted with myself by the odious smells, he considered the place could not be touched by the Sanitary Act as it then stood. The elevated position of Belle Isle, and the deodorising agents employed in the manufactories, have doubtless a counteracting influence; and this may account probably for the inhabitants of Barnsbury suffering more from the effluvia than the people themselves. I think it very possible, as the neighbourhood increases ro rapidly, that some epidemic may arise at a future period if the nuisances are not removed, as there will always be found some idiosyncracies susceptible of disease from slight causes, and they would communicate the effect to others; but, when called upon to give legal evidence, we must be furnished with something more than probabilities, and are often obliged to sacrifice interest to principle.

"I hope I shall not be considered as advocating these filthy nuisances, as every motive of personal interest makes me anxiously desirous of seeing them removed; and, in fact, I only ask for the insertion of the practical difficulties in your widely-circulated paper, with the hope that some of your readers may suggest an equally practical remedy.

"I have the honour to be, Sir, your obliged,

"JOHN ROBERT EDE.

"*Hemingford House, Barnsbury, Sept.* 20, 1855."

Register of New Patents.

256.—JULES CASTEL, merchant, and FREDERIC MARICHEAU BEAUPRÉ, doctor, of Marseilles, in the department of Bouches du Rhône, France, and of Essex Street, Strand, for "*A new system of burner for lamps, called the pyroneumatic burner.*" Patent dated Feb. 2, 1855.

This system of burners is mainly distinguished by several novel forms of the wick-tube or burner part, in which the round or hose-like wick of oil lamps is fixed or contained. In the present improved system this part is either made to taper outwards near the top, or else it is made conical, tapering from the bottom towards the top; the main object of both these modes of construction being to insulate or protect the wick completely from the current of air, so as to prevent its being charred, and cause it to be fed, without producing smoke, with any kind of vegetable or mineral oil.

There is also near the top end of the tube a series of parallel holes, for establishing a proper level of the oil inside and outside the tube. This pyroneumatic burner may be used so as to produce a column flame, or with a damping disc fitted to it, so as to spread the flame and increase its intensity. There is also a metallic cap, which may be adapted to the burner, so as to obtain a suitable impression of air, and this cap may be set higher or lower according to the intensity of light it is deserved to produce.

The inventors claim:—

1. A pyroneumatic lamp burner, which is characterised by a cone fixed above it, which reflects the air that has been retained and heated by the concave shape of the burner tubing. This lamp also burning oils and greases without smoke or smell, the level of the oil and the end of the wick being placed low enough for the reflected air to impinge upon the flame and not upon the wick.

2. Combining with or applying to said lamps various caloriferous apparatus for the purposes above set forth.

289.—EDWARD DAVIES, of Liverpool, oil refiner and distiller, of the firm of Davies, Lyers, and Co., of Liverpool, for "*An improvement or improvements in the manufacture of oil and paraffine from a material not hitherto used for such purposes, to be as follows.*" Provisional protection only obtained.

This invention consists of subjecting the matter lately brought from the Burmese Empire, and may hereafter probably be found in and brought from other countries, called "earth oil," to the process of distillation, and separating the more fluid oil, being very suitable for machinery as well as other uses; the more solid being paraffine, more or less pure. For this purpose the crude earth oil is first subjected to concentrated sulphuric acid, and is then distilled by heat in a suitable still or retort, the distilled products being condensed, as is well understood; the first products are the more fluid, and the paraffine comes towards the end of the process; the residue in the still or retort is of a pitch-like character.

367.—DAVID HULETT, of Holborn, in the co. of Middlesex, for "*Improvements in apparatus for heating, cooking, and lighting by gas.*" Patent dated Feb. 20, 1855.

The first part of these improvements in apparatus for heating, cooking, and lighting by gas has reference to stoves in which gas is used as the heating medium; and the object of this part of the invention is to use glass for the principal portion of the stove, in order to produce a stove more effective in use when applied to cooking, and more ornamental in appearance. The stove for cooking and heating consists of an inner and outer casing, formed of sheets or plates of glass, cemented or otherwise fastened in a metal frame; the inner glass casing may be used either plain or covered upon the outer side with quicksilver or other metallic amalgam, or otherwise coated, in order to reflect the heat given off by the burner to the centre of the stove, in which position the article to be cooked would be placed. The outer casing may be either plain or rendered opaque by placing at the back either plain or coloured paper, or other cheap and suitable material. These stoves may be made either of a rectangular, hexagonal, octagonal, or other polygonal form, by cementing glass plates together in a metal frame to hold them firmly, or by securing sheets or strips of glass in metal frames; or they may be made of a circular figure by making cylinders of glass or bent panels, and fitting one within another to form the double casing, as before described. The bottom of the stove should be of metal, and perforated with holes in the space between the inner and outer casings; similar perforations may also be made in the upper plate; but if glass be used for the top and bottom plates, holes may be either drilled in the glass, or it may be pierced while in a softened state during the process of manufacture, or the perforations may be made in the metal frame which binds the glass plates together, in order to allow a circulation of air between the inner and outer surfaces of the stove. There is an improved burner adapted for use with the improved stove, and this is a gas-burner placed in the centre of the stove; it has a conical metal cover or guard to prevent the grease from getting into the holes of the burner, which is further protected by another cover, which may be made either of metal or earthenware; this cover prevents the fat, &c., which falls to the bottom of the stove from being burnt.

The second part of this invention has reference to improvements in apparatus for lighting by gas, and consists of various arrangements for raising, lowering, and adjusting gas-burners, branched lights, and chandeliers; the principal object of this part of the invention being to supersede the hydraulic joint, to render pendants and chandeliers more secure by improved modes of suspending them, and to facilitate the operation of raising and lowering them.

The inventor claims for—

1. The improvement in gas stoves in which glass forms the principal portion of the stove, whether plain, silvered, or otherwise decorated, for the purpose of reflecting heat, and used in combination with a metallic or wooden frame, and the particular arrangement of the burner to be used with the same.

2. The various mechanical arrangements herein described and shown for raising, lowering, adjusting, and securing pendant lights, chandeliers, and pillars, or any more modifications thereof.

3. The methods of making joints for pendant lights or chandeliers, as described and shown; the joints being intended to supersede the hydraulic joint used for similar purposes.

4. The mode of making a counterpoise weight, by using a bag filled with shot or other similar materials, as hereinbefore described.

369.—CHARLES ROPER MEAD, of Langdale Road, Peckham, in the co. of Surrey, gas engineer, for "*An improved construction of gas-regulator.*" Patent dated February 20, 1855.

This invention relates to a novel arrangement of apparatus for putting an elastic pressure upon the gas supplied to gas-burners, and thereby moderating the supply, or rendering it equable under varying circumstances. In constructing the improved gas-regulator, a weighted diaphragm is employed, which forms by preference the top of the chamber into which the gas is conducted after it leaves the street main. Connected to the weighted diaphragm (the edges of which are secured to the metal case of the chamber by a suitable flexible medium) is a valve, which drops into a seat formed for it in a gas supply-pipe, communicating with the pressure-chamber. The gas entering this pipe fills the chamber, and then passes off by the outlet-pipe. When the supply of gas to the regulator is in excess of the requirements of the consumer, the diaphragm will rise and the capacity of the gas-chamber be increased. This movement will cause the depression of the supply-valve, and consequently the throttling or closing of the inlet-pipe; but when the pressure of the gas is lower than required, the valve will rise and open the inlet-pipe to its full extent.

The chief advantage of this construction of gas-regulator is, that by reason of the comparatively large volume of gas contained in the chamber, and acted upon by the diaphragm (the area of which exceeds that of the valve, and thus compensates for the friction of the working parts and the resistance offered by the gas to the closing of the valve), the supply of the gas to the burners in pulsations which cause a disagreeable flickering of the lights will be avoided. This object will be further assisted by bringing the inlet and outlet pipes in a line with each other.

To prevent the action of the regulator being tampered with, the weights are enclosed in a box at the top of the case, and the box is secured by a padlock.

Another advantage which follows the adoption of this novel construction of gas-regulator is, that the reduction of the pressure at the works, to a given extent, may be made to act upon the gas-regulator in such a manner as to cut off the supply of gas to the pipes in connection therewith. This is effected by attaching to the valve-

lever a double instead of a single valve, and providing valve seats corresponding thereto.

The patentee claims for the general arrangement of parts as herein described, whereby he is enabled to regulate the supply of gas to burners according to the requirements of the consumer, without interfering with the steady burning of the gas; and particularly he claims for connecting the supply or cut-off valve with a weighted diaphragm by means of a rocking-lever, for the purpose before set forth.

377.—Richard Laming, of Carlton Villas, Maida Vale, in the co. of Middlesex, for "*An improved process for combining the purification of gas with the obtaining of certain valuable products.*" Provisional protection only obtained. Dated February 21, 1855.

Impure gas, as it leaves the "condensers," still contains ammonia combined with hydro-sulphuric and carbonic acids. To remove further quantities of those three impurities, the gas is sometimes washed or "scrubbed" with water, in such large proportions that the resulting solution becomes too dilute to be of much value. A more concentrated solution of ammonia is occasionally obtained by purifying gas with water constantly acidulated by a sufficient stream of sulphuric acid; but whenever that has been done, the hydro-sulphuric and carbonic acids separating from the ammonia, and being comparatively insoluble and volatile, have again contaminated the gas, so as to render the use of the acid as a purifying agent good only for one of the three-named impurities, namely, ammonia. By the present invention the ammonia is removed, together with the hydro-sulphuric acid and carbonic acid from gas, and obtains the ammonia in concentrated solution, saturated with sulphuric or other desirable acid, without allowing the hydro-sulphuric and carbonic acids, which it liberates in the process, to become again mixed with the gas.

The invention consists in combining the following operations:—

1. Bringing water or gas liquor obtained from the "condensers," or other suitable liquid contained in a purifying vessel or vessels, in contact with a current of impure gas;

2. Saturating the ammonia as it accumulates in the liquid with sulphuric or other desirable acid, and introduced to it under a bell, or inverted cup, or other equivalent apparatus (which may be either placed in a purifying vessel or form part thereof, or be otherwise in communication therewith); and,

3. Conveying away from the upper part of the said bell, or other equivalent apparatus, the hydro-sulphuric and carbonic acid by a conduit leading either to a furnace, where they may be economically disposed of, or to some other suitable locality. Any excess of hydro-sulphuric and carbonic acids over and above the portions removed by these means may be taken from the gas by other means efficacious for the purpose; but what is preferred is, that all the carbonic acid in the gas shall first be dissolved out of it in combination with ammonia, as suggested in the specification annexed to the patent dated 13th Sept., 1853, thus leaving the gas to be subsequently purified from hydro-sulphuric acid only, which may then be done in a most satisfactory manner by the oxide-of-iron mixture described in the specification annexed to a patent bearing date the 4th Nov., 1847, or by other means.

388.—George Noble, of Sunderland, for "*Improvements in the manufacture of fire-bricks.*" Patent dated February 21, 1855.

This invention consists of a combination of hydraulic machinery for pressing clay in a pulverised state, without or with a slight addition of water. The machine consists of a hopper, or receiver, into which the pulverised clay is conveyed by an endless web, or apron, from the mill where it is ground; and the hopper conducts the material into moulds for compression. The moulds are attached to an iron plate, or table, supported by an iron frame, upon which the table and moulds are driven alternately by hydraulic power applied to each end of the frame. There are two moulds, and to each mould there is a ram, the top of which in each case forms the bottom of the mould. The moulds travel underneath the hopper, to receive a sufficient quantity of clay, and then pass on to a large hydraulic ram, by which the clay in the mould is compressed into a brick. The large ram is in an upright position under the middle of the frame, and on the frame are two binding or side-plates, between which, and over the top, is a piece of metal, or keep-plate, to support the action of the pressure exerted upon the brick, and to form alternately the top of both moulds. At each side of this keep-plate is a spout from the hopper, fitting close to the table; and as the moulds pass alternately over the large ram, each mould fills with clay from its respective spout. Near to the bottom of each brick-ram is a sheave which, as each mould moves out from the press, ascends an incline, and thus elevates the brick-ram level with the table, and thereby leaves the brick free from the mould. The brick-moulds are made with loose sides and ends, each having a bevel on the outsides, while they are square on the inside. The outsides are supported by a metal frame, or box, into which they are fitted, so that when the sides and ends are drawn downwards they fall back in proportion to their bevel. The pressure of the water is regulated by an upright hydraulic chamber, to the ram of which is suspended sufficient weight according to its area, in proportion to the area of the large press for consolidating the clay into a brick.

The claim is for the combination herein described, whereby hydraulic apparatus is employed for moving the moulds, as well as for affording the requisite pressure; and also for the constructing and combining of the parts of the moulds, as before described.

449.—Bewicke Blackburn, of Clapham Common, in the co. of Surrey, for "*Improvements in the manufacture of pipes.*" Patent dated February 28, 1855.

This invention consists in forming pipes by constructing tubular frames with thin pieces of wood bent spirally and crossing each other diagonally, the inserstices between the pieces of wood being filled up with, and the whole of the framework cemented together and completely enveloped in, a matrix of asphalte, or other suitable cement.

It is preferred to creosote the wood, or prepare it by some other approved preserving process. These pipes are joined the one to the other by means of iron sockets, or collars; and when side junctions are required, circular pieces are cut out of the pipe by crown saws, and iron sockets inserted.

The claim is for the manufacture of pipes by employing thin pieces of wood bent spirally and crossing each other diagonally, the interstices being filled up, and the whole of the framework cemented together by asphalte, or other suitable cement.

459.—Thomas Dodds and Richard Leake, of 4, Horse Shoe Court, Ludgate Hill, London, lithographers, and William Fletcher, of 2, St. James Street, Old Kent Road, London, engineer, for "*Improvements in the construction of a machine for heating all kinds and descriptions of furnaces with coal or other gases.*" Provisional protection only obtained. Dated March 2, 1855.

This invention consists in burning the gas from three or more pipes situated near each other, and the heat produced by the combustion causes a draught of air to pass through a chamber or flat tube and play against the flame.

The claim is for a machine to be used for the purpose of heating water and generating steam in boilers; also to be applied to the heating of bakers' ovens, greenhouses, cooking apparatus, and all furnaces and stoves; and for generating hot air by the use of coal and other gases.

499.—Adam John Burr, of 42, Alfred Road, Paddington, in the co. of Middlesex, civil engineer, for "*Improvements in gas meters.*" Provisional protection only obtained. Dated March 6, 1855.

This invention relates to the general construction and arrangement of wet gas-meters, and consists of an outside metallic casing, which is divided into three compartments or chambers by vertical divisions, which, however, permit the water in all the chambers to communicate; the two end chambers being of equal size and much larger than the central one, which contains within it, in proper sub-compartments, the inlet, exit, and syphon pipes hereinafter described; in each end chamber is placed a measuring-cell, composed of metal or other suitable material, which is inserted, and has its mouth always immersed in water. These cells rise and fall vertically through a certain given distance comprehended between fixed points. It will thus be obvious, on reflection, that as the cells rise and fall, there will always be the same capacity opened and closed for the admission and expulsion of air, although the level of the water may vary, and this capacity will depend of course on the amount of movement of the cell. Beneath and within is a four-way hydraulic valve, which governs the flow of gas in connection with the measuring-cells. These valves consist each of a semi-cylindrical or nearly semi-cylindrical chamber, working in the water with its mouth downwards, and they are divided longitudinally into three chambers by vertical partitions, which are so arranged that when one edge of the valve is brought up to the top of its stroke, by turning it round on its axis the mouth of the first chamber will be above the water level, and consequently in communication with the interior of the inverted measuring-cell placed over it; at the same time, the other chambers in the valve, that is, the second or central one and the third chamber, will communicate with each other by the raising of a portion of the partition between them above the water level. The branches of the inlet-pipe open respectively into the first chamber of the valve, and the gas passes therefrom and fills the measuring-cell above it, thereby elevating it, and actuating the opposite valve, with which it is connected by means of levers and connecting rods. This elevating of the measuring-cell in its chamber, or enclosing compartment, expels the air or gas contained between the outside of the measuring-cell and the inside of the compartment, and causes such air or gas to escape through a lateral opening in the chamber, and enter one end of an inverted syphon, which opens at its other end into the central chamber of the valve; and, as this chamber is at present in communication with the third chamber of the valve, the air or gas passes therefrom into the third chamber, and thence into that branch of the exit-pipe which opens into it.

While the ascent of the measuring-cell is thus going on in one compartment of the meter, access has been provided for the gas into the space outside the measuring-cell in the opposite compartment, by reason of the communication being opened between the inlet-pipe and the said outside space through the middle chamber of the valve and the inverted syphon, each valve being constructed and worked in a precisely similar manner, and having each the same arrangement of pipes and chambers; and they are so constructed and worked that *each* valve establishes free communication—first, and simultaneously between the *inlet*-pipe and the *inside* of the cell, and between the *outside* of the cell and the *outlet*-pipe; and, secondly, and also simultaneously between the *inlet*-pipe and the *outside* of the cell, and between the *inside* of the cell and the *outlet*-pipe; and that the changes from the one condition to the other are effected in each of the valves by the motion of the opposite cell, through the intervention of levers and a connecting rod, as already stated; that motion, when in an upward direction, being due to the excess of pressure of the gas on the inside of the cell, and when downwards, to excess of the pressure on the outside; this movement is transmitted from one of the cells to the index by two pins or studs on the valve actuating the rod connected with it; which studs, as the rod moves to and fro, actuate the tail of a short lever, which carries a pall at its upper end, and taking into the teeth of a ratchet-wheel.

This wheel gives motion by means of an endless screw and toothed wheel, or other suitable arrangement, to the index, which may be placed on the top of the small central chamber or compartment of the meter. For the purposes of adjustment of this part of the mechanism the tail of the pall-lever is forked, and may be thereby expanded or contracted, so as to be acted upon more or less by the stud-pins. The points which define the movements of the cells may be all fixed except one, which may consist of an adjusting screw, so applied that the exact movement of one cell may be under precise control for the final adjustment of the registration. The float-valve

connected with the inlet-pipe is made so that it will adjust itself readily on to the top of the pipe. This is effected by simply making the plate constituting the valve slightly loose or free in its bearings. The float may be of the usual kind, or it may be composed of cork, or other buoyant substance, coated with gutta percha to prevent saturation. An overflow-plug is fixed into the meter to regulate the level of the water therein. The valves have their working centres placed below the centre of gravity, so that they will have a tendency after the centre of gravity has passed over the pivots to cause each cell to remain at the end of its stroke (in either direction) until the other shall have completed its transit. The absolute weight of the valve must be made sufficient to effect the purpose. In order to counteract the weight of the measuring-cells, the remote edge of the valves may be weighted, or an air chamber may be attached to the cell, the buoyancy of which in water shall counterpoise the weight of the cell.

PROVISIONAL PROTECTION

HAS BEEN GRANTED FOR THE UNDERMENTIONED INVENTIONS.

1811.—WILLIAM HENRY LANCASTER, of 1, Peach Place, Brownlow Hill, and JAMES SMITH, timber merchant, Sefton Street, Toxteth Park, both of Liverpool, in the co. of Lancaster, for "*Certain improvements in the manufacture of gas for illuminating, heating, and other purposes.*" Aug. 10, 1855.

1841.—GILBERT SANDERS, of Dublin, in Ireland, gas engineer, and RICHARD EDWARD DONOVAN, of Courtduffe, at Castleknock, in the co. of Dublin, in Ireland, gentleman, for "*Improvements in maintaining the level of the water or other liquids in gas-meters and steam-boilers, and regulating or controlling the action of such apparatus.*" Aug. 14, 1855.

1872.—THOMAS EDGE, of Great Peter Street, Westminster, gas-apparatus manufacturer, for "*An improvement in the manufacture of gas meters, and other articles for containing and supplying gas.*" Aug. 17, 1855.

1943.—CHARLES ESPLIN, of 21, William Street, Church Street, Lambeth, for "*Improvements in apparatus for regulating the supply of gas.*" Aug. 27, 1855.

1978.—THOMAS BENTLEY, of Margate, in the co. of Kent, ironmonger, for "*Improvements in apparatus for heating water or other fluids by gas.*" Sep. 1, 1855.

1992.—WILLIAM ARMAND GILBEE, of 4, South Street, Finsbury, London, gentleman, for "*Improvements in the production of carburetted hydrogen gas.*" Sep. 3, 1855.

2002.—WARREN DE LA RUE, of Bunhill Row, in the co. of Middlesex, for "*Improvements in treating Burmese naphtha when obtaining products therefrom.*" Sep. 4, 1855.

2030.—HENRY HART, of 5, Waterloo Crescent, Dover, in the co. of Kent, gentleman, for "*Certain improvements in the manufacture and composition of lubricating and burning oils.*" Sep. 8, 1855.

1973.—THOMAS DODDS, of 53, Wigmore Street, Cavendish Square, London, military and travelling equipage manufacturer, for "*Improvements in the construction of an apparatus for heating all kinds of furnaces with coal or other gases.*" Sep. 1, 1855.

1979.—ALFRED VINCENT NEWTON, of 66, Chancery Lane, in the co. of Middlesex, mechanical draughtsman, for "*Improvements in the manufacture of gas for illumination.*" Sep. 1, 1855.

2059.—ETIENNE CHARLES ZACHARIE BOUCHARD, civil engineer, Paris, for "*Certain improvements in producing gas for lighting and heating.*" Sep. 11, 1855.

2071.—ABRAM LONGBOTTOM, of 41, Moorgate Street, London, and Soho Foundry, Leeds, engineer, for "*Improvements in the manufacture of gas when oils or fatty matters are used.*" Sep. 13, 1855.

NOTICES HAVE BEEN GIVEN OF INTENTION TO PROCEED WITH THE UNDERMENTIONED PATENTS.

988.—JOSEPH LACASSAGNE and RUDOLPHE THIERS, both of Lyons, in the empire of France, and of 32, Essex Street, Strand, London, for "*An electro-metric regulator for electric telegraphing, lighting, and electro-motive purposes.*" May 4, 1855.

1011.—HENRI MARQUIS DE BALESTRINO, of Genoa, for "*Improvements in obtaining motive power by the aid of explosive gases.*" May 7, 1855.

1134.—THOMAS PIGGOTT, of Birmingham, in the co. of Warwick, manufacturer, for "*An improvement or improvements in telescopic gas-holders.*" May 21, 1855.

1812.—GEORGE DURHAM, of 3, Drummond Crescent, Euston Square, and CORNELIUS WYATT, of 1, Conduit Street, Regent Street, for "*Improvements in the manufacture of grease for lubricating the axles of railway and other carriages, and the journals of machinery generally.*" Aug. 10, 1855.

1166.—WILLIAM SMITH, of Snow-hill, in the City of London, and NATHANIEL FORTESQUE TAYLOR, of Gloucester Terrace, Park Walk, gas engineers, for "*Improvements in meters for measuring gas and other fluids.*" May 24, 1855.

2002.—WARREN DE LA RUE, of Bunhill Row, in the co. of Middlesex, for "*Improvements in treating Burmese naphtha when obtaining products therefrom.*" Sep. 4, 1855.

Review.

FUEL AND ITS APPLICATIONS.

CHEMICAL TECHNOLOGY, *or Chemistry in its Applications to the Arts and Manufactures.* By Dr. EDMUND RONALDS, *Professor of Chemistry in Queen's College, Galway, and* Dr. THOMAS RICHARDSON, *of Newcastle-upon-Tyne. With which is incorporated a Revision of* Dr. KNAPP'S *Technology. Second Edition, Vol.* 1. *Parts* 1 *and* 2. London: H. Baillière.

IT is seldom we meet with a work that enters so thoroughly into the subject it treats of as this new edition of Drs. Ronald and Richardson's Chemical Technology. The portion yet published comprises only the first volume, in two parts, which is entirely devoted to fuel and its applications, occupying upwards of 800 pages, and being illustrated with more than 400 wood engravings. The great importance of the subject has induced the authors to give it this full development, and there is scarcely any point of view in which fuel and its uses can be considered from which it has not been examined. Commencing with the nature and properties of fuel, the authors proceed to the consideration of the effects of heat on various kinds of combustibles, the relative values of different fuels, their applications to the production of heat, their practical values, their application to the production of light, the relative values of the different sources of light, the secondary products of gas manufacture, &c. This summary of the contents of the first volume is sufficient to show how extensive are the investigations undertaken; nor have the authors flinched from a minute examination of every department. Since the publication of the first edition the extension of the branches of manufacture connected with fuel has been so great that they have been compelled to rewrite the work almost entirely, and to expand this portion to its present large dimensions. As an illustration of the improvements that are continually being made in the manufacturing applications of fuel, Mr. Young's discovery of the production of paraffine by the slow distillation of coal is especially mentioned, as having already effected the price of sperm oil at least 25 per cent., and caused a reduction of one-half in the importations. This fact, combined with the extraction of other oleaginous substances from mineral fuel by different chemical processes, induce the authors to anticipate that this country will ere long be rendered independent of foreign supply of all fatty matter; there need be no fear, therefore, of our being in darkness from the want of Russian tallow.

That portion of the work, however, to which our attention has been more particularly directed, is the application of fuel to the production of light, the consideration of which occupied more than one-third of the first volume. In dealing with this branch of the subject the authors have collected the principal facts connected with the manufacture of gas, and have considered generally in an impartial manner the merit of the competing processes and contrivances, the utility of which are at present mooted questions with gas engineers. Though not practically acquainted with gas making on a large scale, the authors have, nevertheless, succeeded in producing a work from which even experienced gas manufacturers may gain some valuable information from the remarks which the chemical knowledge of the authors enables them to suggest. Such a complete representation of the various processes that have been adopted at different times, with an examination of their relative merits and defects must, indeed, be acceptable to all who take interest in this important department of manufacturing industry.

Among the facts incidentally noticed, and not generally known, is the remarkable absence of the compounds of arsenic from the iron pyrites of the coal-fields, though the same mineral, when it occurs in other geological formations, is frequently accompanied with arsenic. Had this not been the case, it is observed:—

"A most serious objection would have arisen to the use of coal gas for domestic purposes, and great difficulties have been thrown in the way of its purification, even if sanitary precautions would ever have permitted a gas to be used which was liable to evolve in burning so virulent a poison as arsenious acid."

The deleterious influence of the moisture of coal in gas-making is a point strongly enforced, and requires to be constantly borne in mind by the manufacturer. The natural quantity of moistures varies in different specimens of coal from 1 to 14 per cent., and it is to this source that the greater portion of carbonic acid which accompanies the gas is to be attributed.

"Aqueous vapour, in contact with red-hot charcoal, becomes converted into carbonic acid, carbonic oxide, and carburetted hydrogen; while the bisulphuret of iron is much more readily converted in its presence into sulpuretted hydrogen and the peroxide."

The following description of the process of distillation, and of the chemical changes that take place during the evolution of the volatile products of the coal, affords a favourable specimen of the manner in which the authors treat their subject; and it may be of use also, by bringing prominently into notice the defects inherent in the present system of gas making in closed retorts heated externally:—

"The decomposition of the coal begins a little below a red heat, and continues, when large quantities are employed, for several hours—the quantity of gas gradually diminishing towards the end. According to Perkston, in an eight hours' distillation, the relative quantities of gas given off are—in the first hour 20, in the second 15, in the third 14, in the fourth nearly 13, in the fifth 12, in the sixth 10, in the seventh 9, and in the eighth about 8 per cent. of the whole quantity, when the fire is uniform and the vessels constantly at a red heat. The cubic foot at the end, therefore, costs two and a half times as much as at the beginning. The quality of the gas at the different periods of the distillation, however, must also be taken into consideration. For this purpose, it will be well again to direct attention to the ingredients of the gaseous mixture. This consists, after the separation of the tar and the aqueous liquid, of *olefiant gas, light carburetted hydrogen, carbonic oxide, hydrogen, vapours of the volatile oils of tar, sulphuret of carbon, ammonia, sulphuretted hydrogen, carbonic acid, cyanogen, sulpho-cyanogen, hydro-chloric acid(?), aqueous vapour, and nitrogen.* The carbonic oxide and a part of the free hydrogen have doubtless the same origin, being formed from the moisture in the coal or from the first portions of aqueous vapour that are generated passing over the red-hot coke. The nitrogen of the coal is converted entirely into cyanogen and ammonia, which are partly in combination, while the latter is also found combined with sulpho-cyanogen and the other acids, forming volatile salts; the *free* nitrogen, on the contrary, is the residue of atmospheric air contained in the retort. Sulphuretted hydrogen and sulphuret of carbon are due to the sulphur and iron pyrites in the coal. The first four of the ingredients named, with the illuminating vapours of tar oil, form the proper bulk of the gas; the others are impurities, and being only present in small quantity, should have been separated in the process of purification. It has been found by experience that the relative proportions of these four ingredients vary with the deviation of the distillation, and that the illuminating portion of the gas is evolved during the earliest stage of the process."

In discussing the comparative advantages of clay and iron retorts, the authors most strongly advocate the former. The advantages of clay retorts are stated to be, the production of a larger quantity of gas of equal or even of superior quality from a given amount of coal, with diminished prime cost and greater durability. The objections that have been raised to clay retorts are, however, candidly stated, and it is admitted that the greater heat at which they require to be worked tends to impoverish the gas produced.

It would be useless to follow the authors in their descriptions of

the various processes of gas manufacture and its distribution, since they do not profess to throw new light on a subject that is so well known to most of our readers. The value of the work consists in its being a true and ample record of the progress that has been made, and of the improvements that have been attempted. The various contrivances that have been invented for improving the method of heating and feeding the retorts, for purifying the gas, and for measuring and burning it, are noticed with sufficient detail; and an adequately full account is also given of the attempts to make illuminating gas from other sources than coal, amongst which the hydro-carbon process figures conspicuously. The authors, in their endeavour to make this part of the work as complete as possible, have referred to nearly all the best authorities; and they very handsomely acknowledge that they were indebted for much information to the columns of the JOURNAL OF GAS LIGHTING. Some errors have crept in, which, under the circumstances, were perhaps unavoidable. Among these, we may point out, as more immediately connected with the information derived from our columns, that in the table at page 576, showing the relative yields of illuminating gas from different varieties of coal, the name of Mr. Evans is incorrectly given as the authority, instead of that of the author of the "Chemistry of Gas Lighting," in the JOURNAL OF GAS LIGHTING; and in page 642, in noticing the experiments on hydro-carbon gas recorded in this JOURNAL, the oxide of iron employed in purifying the gas is erroneously stated to have materially diminished its illuminating power. These, and other inaccuracies that might be pointed out, would have been better avoided, but they are not of a character to detract from the value of the work, which gives the best account of the various processes of gas manufacture that has yet been published.

Miscellaneous News.

THE SPECIAL COMMITTEE ON THE SUPPLY OF GAS IN LIVERPOOL.

FIFTH DAY.—SEPT. 7TH.

A meeting of the committee appointed to investigate the gas affairs of the town was held in the Council Chamber this afternoon, Mr. KITCHEN in the chair.

The CHAIRMAN, in opening the proceedings, said they would be aware that, at their last meeting, they appointed a sub-committee, consisting of Mr. Clint, Mr. Bradley, and himself, to go through the whole of the returns, and to classify them. The sub-committee had had three meetings since then, and they had succeeded in getting through the whole, and completing the classification; and they had issued about 100 circulars to those whose testimony could be fully relied upon, and of whose respectability there could be no doubt; and therefore, in order that they might personally confirm what they had stated in the returns, they had summoned for to-day about fifty persons, and a similar number would be summoned for Monday.

Mr. *Hess* was first called, and said that, with regard to gas bills, they had increased this year over last year. The bill for the half year from December to July in this year was £5. 2s. 6d., and in the corresponding half year of last year it was £4. 5s. 6d. He certainly had no additional lights, but he had every reason to believe he had less. The quality of the gas was decidedly worse. The taps were always at full turn; but the meters were never altered, and the light was not so brilliant as it had been. For about twenty years he had had the same meter, and it had never been altered in any way; and it was the same now as it was at first, except for the extra rust. If he sent to the gas-office to get some one to do any repairs, they charged for sending a man up to look, and they charged for the workman sent to do the work. Formerly they did not make any charge for the person who inspected.

Dr. *J. O. Taylor*, 65, Everton Road, was the next witness examined. He complained of his gas bills being higher since the reduction in the price of gas. In the half year up to June 18th, 1854, with four burners, the bill for gas was £1. 2s. 10d., which, deducting 3s. for meter-rent, would make the actual cost of the gas 19s. 10d.; and for the half year ending the same period in 1855, the bill was £1. 13s. 5d., or, deducting 3s. for meter-rent, £1. 10s. 5d. for cost of gas. The additional burner generally relieved one of the old ones, and he had no reason to believe that his consumption was greater in the half year of 1855 than in 1854. Adding one-fourth the cost for the fifth burner—namely, 4s. 11½d.—the cost for 1855 should be, for the five burners, at the old price, £1. 4s. 9½d.; but, deducting the 6d. reduction per 1000 on the last half year—3s. 3½d.—the sum ought to be £1. 1s. 8d., instead of £1. 10s. 10d. This was an increase of 8s. 8d., or about 40 per cent. In the half year to June 18th, 1854, the gas consumed was 4400 cubic feet for four burners; for 1855, the number of feet was 7600, and, giving the one-fourth increase to the half year of 1854, the number of feet for 1855 should be only 5500.

Mr. *Metcalf*, who keeps two workshops, produced receipts. In reference to one workshop, up to June, 1854, his bill amounted to £2. 1s. 7d., and in the corresponding period of the present year, £2. 9s. 6d. In March, 1854, his bill was £3. 19s. 4d., and the corresponding bill for this year was £5. 0s. 8d. That was for one of his shops, in New Bird Street, at the corner of Newhall Street. Another bill, up to June, 1854, amounted to 14s. 6d., and for the corresponding period this year, 16s. 2d. He never complained of the overcharge. He had often put water in the meter himself.—In answer to Mr. Gladstone, he said he was certainly of opinion that he had been charged more this year for gas than last, under the same circumstances of consumption. His own opinion was, the bills should have been less this year. Within the last eighteen months there was a greater escape of gas, and he had often thought they had more pressure.

Mr. *Chapman* said he had complained in his report of the bills being larger this year than last; but he had found out it was an error in the account, which he subsequently discovered. He complained of the meter charge being too much; and he thought that a test-officer should be appointed.

Mr. *Banks*, 51, Netherfield Road North, produced his gas bills for the quarters ending June, 1851, and June, 1855. The bill for 1854 was 10s. 6d., and for 1855, 14s., and he had no reason to believe that he consumed more gas in the one quarter than he did in the other, or that there was any carelessness by servants. He considered that it would be more satisfactory to have a public officer appointed to test the meters, and he had reason to complain of exorbitant charges for fittings and repairs.

In answer to Mr. BRADLEY, Mr. *Banks* stated that no public officer ever called upon him for the purpose of testing the meter.

Thomas Lovett, of Williamson Street, produced gas bills showing that from June to October, in 1852, the charge for gas alone was £14. 10s. 10d., and that the charge for corresponding periods now was only £2. 5s.

Mr. GLADSTONE: Do you mean to say that, for gas alone, the bill was £14. 10s. 10d.

Witness: Yes. I asked for an explanation, but could not get any. We had six burners then, and now we have ten.

Mr. SHEIL: What, £14. 10s. 10d. for six burners, and only £2. 5s. for ten burners?

Witness: Yes, indeed; and I became so disgusted with gas after that, that I could not bear the sight of it. Some of their own men told me that it was impossible the quantity of gas could have come through the meter; and, as to an escape, I was told that was out of the question, as one shilling's worth of gas in the week would poison us.

To Mr. GLADSTONE: I never perceived an escape more than is usual, and I generally remedied it by white lead, which I keep in the house; and I have a son, who is a very ingenious young man, who generally did it.

A member of the committee suggested, *sotto voce*, that "the ingenious young man" might have produced this extraordinary state of things.

Mr. *W. Rogers*, of St. James's Street, produced bills for corresponding quarters in 1854 and 1855. The accounts for these quarters respectively were, for the first, £2. 3s. 5d., and for the second, £1. 15s. 7d.; and the quantity of gas in each period was, in the quarter of 1854, 190,000 cubic feet; and, in 1855, 210,000 cubic feet. In the latter period, for one month his premises were closed two hours earlier each evening. He considered the charge for meter and fixing excessive, and that it would be advisable to have a public officer to examine meters.

Mr. *Whitty*, draper, Price Street, produced bills for 1854 and 1855. In the quarter ending March, 1854, the bill was £3. 11s. 10d.; in March, 1855, £4. 0s. 11d.; in the quarter ending June, 1854, £1. 0s. 1d.; and in June, 1855, £1. 2s. 11d. He had not increased his burners, and had diminished his hours of burning.

Mr. *J. Gelling*, flour dealer, was next examined. He proved that, without additional burners or additional time of burning, the difference between the quarters ending in June, 1854 and 1855, was as 9s. 1d. to 15s. Witness stated that at one time the parties at the gas-office said there was an error in the registry, and charged according to their own views of the amount of gas burned. He had had communications from Mr. Steele on the subject.

Mr. Gelling was requested to attend the committee on Monday, and produce these communications.

Mr. *John Lewis*, 1, Basnett Street, complained of his bills having increased during the last two years; and his receipts showed a difference of 2s. 3d. to 5s. 10d.; 4s. 8d. to 6s. 8d.; £1. 2s. 10d. to £1. 9s. 11d.; £1. 1s. 3d. to £1. 5s. 9d. He never complained of his bills, and he did not know there was any difference until this inquiry took place.

Mr. *John M'Clintock*, jeweller, 24, Berry Street, said he paid much more than he did ten years ago. His receipts up to March, 1854, showed a payment of £1. 12s.; and up to the same period this year, £1. 14s. 10d. In June, 1854, he paid 14s. 10d.; and for the corresponding period this year, 15s. 2d. There had been a gradual increase in his bills during the last ten years, beginning with £3. 9s. 6d., and ending in 1854 with £4. 17s. 3d., and this result took place without any increase in consumption.

Mr. *Hangess*, Byrom Street, said his bill had slightly increased, in spite of the reduction of price; and he thought a public inspector would be very useful to stand between the consumer and the company.

Mr. *Joseph Cox*, of 39, Renshaw Street, said the consumption of his gas was so irregular he could not make a comparison. He had done his own fittings. He thought his charges were more reasonable than the charges of the company. His fitters were working on the piece; but fitters from the company could take their own time. The great bulk of the fitting is done by boys and young men here; the great bulk of the experienced hands go to other towns, where they can be better remunerated. He thought it would be desirable to appoint a public tester. He did not think they charged for the meters in Birmingham.

Mr. *John E. Gladstone*, of Everton Road, said he complained of great inattention on the part of the company. After a message being sent by a tradesman, sometimes they would not come to see about it for a fortnight or three weeks. The charges were exorbitant, and his bills were on the increase. The company charged too much for the boys sent to fit up along with the men. He could get boys for three shillings a week; but the company charged for them at the rate of half-a-crown a day. They did not charge the time the fitters took; but mentioned their names, and charged in a lump.

Mr. *Bannister*, London Road, said he was under the impression the meter did not register correctly. The charges for fitting up were extravagant—at least, he could have got it done for less money. The poor cannot afford fixtures, or they would burn gas.

Mr. *John Lowdon*, 71, Rose Place, said he had not had time to prepare his bills. The charge for meters was exorbitant; and the work

for repairs was very imperfect, and the charge for apprentices too high. The grocer finds his own measure, and the draper his own yard stick, and he thought the gas company should find the meter, and not charge for it.

Mr. *Willan* produced receipts which showed his charges this year to be heavier than those of last year. He was quite at a loss to account for this difference, and he had complained to the company of the circumstance. The result had taken place at a time when he had one burner less.

Mr. *Thomas Dobson Walker*, a chemist, 30, Ranelagh Street, said the cost of gas had increased to him; and his bill for the quarter in 1854 amounted to £1. 7s. 6d., and in the corresponding period this year it was £1. 12s. 5d., although he had consumed less, in consequence of the early-closing movement having led him to close at an earlier hour in the night than last year. A man came to put hot water in the meter, and he charged 6d. for it.

Mr. GLADSTONE: He got the hot water from you?

Mr. WALKER: Yes.

Mr. GLADSTONE: Well, then, you should have charged him 6d. for the hot water, and that would have made all square. (Laughter.)

The TOWN CLERK then said he had received a letter from Mr. Barlow, which he read. It was as follows:—

"3, *Parliament Street, London, Sept.* 3, 1855.

"Joseph Kitchen, Esq., Chairman of the Gas Committee,
Town Hall, Liverpool.

"Sir,—My attention has been called to the evidence given by Mr. Flintoff, before the committee of which you are chairman, as reported in the *Northern Daily Times* of the 21st ult., in which my name is introduced so unfairly, as confirming that individual's assertions relative to an alleged deterioration in the illuminating power of the gas supplied by the Liverpool United Gas Company, that I am under the necessity of requesting you to place on the minutes of the next meeting of the committee the report to which Mr. Flintoff refers, a copy of which is enclosed.

"It will be seen, on perusing this report, that the *lowest* illuminating power I obtained from the four-feet burner, without using wax, was 20·434 candles, consuming 120 grains per hour, and the mean of the two experiments recorded was 21·109 wax candles.

"If any confirmation were needed of the accuracy of my experiments, I need not do more than refer to Mr. Clegg's report of the 24th ult., in which he states that he found four feet of the gas to give a light equal to 17·89 *sperm* candles, consuming 144 grains per hour, which is equivalent to 21·46 candles, consuming 120 grains per hour; and, taking into consideration the superior luminiferous properties of spermaceti over wax, his experiments give results decidedly superior to mine.

"I am, sir, your obedient servant,
"THOMAS G. BARLOW."

[COPY.]

"*London. June* 30, 1854.

"I hereby certify, that on the 29th of May last, at the request of Alfred King, Esq., engineer to the Liverpool United Gas Company, I made three careful experiments in the photometrical laboratory of the company's office, in Newington, upon the illuminating power of the gas then being supplied to the public. Each experiment was continued for twenty minutes—observations of the illuminating power, and the consumption of gas being made every minute, and the actual loss in weight of the candle used being ascertained at the termination of each experiment. The following were the results obtained:—

"EXPERIMENT No. 1.

"The burner employed in this experiment was one of the ordinary Liverpool bat's-wing burners, which had actually been used for some time, as was proved by the manner in which the orifice was corroded and burnt up. The quantity of gas consumed in 20 minutes was 1·330 feet, or at the rate of 3·990 feet per hour, and the illuminating power of the gas with this burner, calculated on a consumption of four feet per hour, was equal to 18·92 SPERMACETI candles, consuming 129 grains per hour.

"EXPERIMENT No. 2.

"The same burner was employed in this experiment as on the first, the quantity of gas consumed being 1334 feet in 20 minutes, or at the rate of 4002 feet per hour. The illuminating power of the gas, calculated on a consumption of four feet per hour, was equal to 20·424 WAX candles, consuming 120 grains per hour.

"EXPERIMENT No. 3.

"Feeling assured that the burner used on the two previous experiments was not a fair sample of the burners in which Wigan cannel coal is ordinarily consumed, I changed it for a well-constructed union jet, a fish-tail, the consumption of gas in which was 1360 feet in 20 minutes, or at the rate of 3900 feet per hour. The illuminating power of the gas thus burnt, calculated on a consumption of four feet per hour, was equal to 23·784 WAX candles, consuming 120 grains per hour.

"I also examined the books of the company in which is registered the account of the quantity of gas made and cannel used, and I ascertained therefrom that the yield per ton of cannel at the period when these experiments were being made was slightly in excess of the general average yield; from which I infer that the mean illuminating power of the gas usually supplied in Liverpool will be somewhat higher than is indicated by the above experiments.

(Signed) "THOMAS G. BARLOW,
Civil and Consulting Gas Engineer."

The TOWN CLERK next read the following letter, which had been forwarded to Mr. Reay, with a request that it might be laid before the committee:—

"*Warkworth, Banbury, Sept.* 3, 1855.

"Sir,—Perceiving by the evidence given before the inquiry by a committee of the Liverpool corporation on the supply, price, and quality of the gas supplied at Liverpool, that the evidence given in 1845 by my late lamented father, Mr. Joseph Hedley, was referred to, I beg to offer my services, if they can be of any use in the inquiry. I know Liverpool, and am well acquainted with the cost of manufacturing cannel coal gas. I lighted Birkenhead in 1840, then acting as sub-engineer to Mr. Henry Steele, and have been all my life practically connected with gas-works, and am now practising as a consulting gas engineer. "T. A. HEDLEY."

The CHAIRMAN said he apprehended that, as Mr. Clegg's services had not been made useful to the committee, there could be no benefit arise from sending for Mr. Hedley, especially as the Gas Company had declined to allow Mr. Clegg to inspect their premises.

Mr. GLADSTONE presumed that Mr. Hedley had a local acquaintance with Liverpool, which Mr. Clegg had not. He understood that he constructed the Birkenhead works, and had also been under Mr. Steele, who was formerly manager of one of the Liverpool companies.

Mr. REAY: Yes; he was manager of the Queen's Square Company, and now he is secretary and manager to the existing company, and Mr. King is the engineer.

Mr. GLADSTONE did not wish to involve the corporation in any unnecessary expense, but if there was any information to be got from Mr. Hedley that might be practically beneficial to the committee, he thought they ought to have it. The Gas Company has set them at defiance, more particularly in having closed their works against them.

Mr. SHIEL thought that at least they had better first dispose of that part of the investigation in which they were now engaged, and they could afterwards consider the proposal contained in Mr. Hedley's letter.

SIXTH DAY.—SEPT. 10.

This committee met in the Town-hall at one o'clock. Mr. KITCHEN occupied the chair, and the other members present were, Messrs. Hornby, Bradley, Crosthwaite, and R. Gladstone.

Mr. REAY and Mr. EVANS, solicitor, were present on the part of the Guardian Society.

The CHAIRMAN said the committee would now proceed with a similar class of evidence to that taken on Friday.

Mr. *Bartholomew M'Govern*, baker, of Low Hill, Brownlow Hill, and Myrtle Street, complained of gradual increase in the amount of his bill for gas, despite the late reduction. His bill for 1854 was £10. 10s. 3d., and for 1855, £12. 3s. 8d. His quarter's bill for March, 1854, was £3. 10s. 4d., and for the corresponding quarter of 1855, notwithstanding the reduction, £4. 0s. 4d. A singular fact was, that he was charged more in one of his shops than in another, although he consumed the same amount. His shop in Myrtle Street was charged more, although having the same number of lights, and he never interfered with the meter. When he complained of overcharge, he was told, if he wanted to have cheaper lights, he must go elsewhere.

Mr. *Joseph Cafferata*, 26, Everton Road, stated that from September to December his consumption, calculating on his bills, was 5d. and a fraction; while from December to March the rate had somewhat increased, notwithstanding the reduction in price. He also complained of a great amount of incivility upon the part of the company. He remarked on an irregularity of lighting Everton Road during the frost.

Mr. CROSTHWAITE: Oh! many of the lights went out during that season.

Mr. *Anthony Lillyman*, 45, Duke Street, stated that the two quarters' charge, from January to June, 1853, was £1. 8s. 2d.; same time, 1854, £1. 9s. 11d.; same time, 1855, £1. 19s. 2d. The same number of lights and the same amount of consumption were used during these times.

Mr. *Edward Heathcote*, grocer, 16, Elliott Street, complained that he was charged the same amount in 1853, for a second shop he has in Berry Street, as in 1855. In a previous year the meter did not register, and he was charged as per computation.

Mr. *William Stewart*, Great Homer Street, complained that from August to June, 1854, he was charged 12s. 4d., and for a corresponding period this year, 16s. 8d., while he had the same number of lights burning, and for just the same time.

Mr. *Francis Henry*, 31, St. Thomas' Buildings, complained through his written return that, from December to March, 1854, he was charged £6. 9s. 5d., and for the corresponding period this year, £7. 1s. 4d. From March to June, 1854, £2. 6s. 7d., while from March to June, 1855, he was charged £3. 4s. 1d. The same hours and the same number of lights in both instances.

Mr. *James Bowman*, 55, Park Road, complained of a gradual increase in his bills, although he had had no increase in the consumption. This witness had not brought with him his bills for 1854, which the committee desired to compare with those of 1855.

Mr. *James Hodgkins*, 56, Cable Street, complained chiefly of incivility and want of attention on an occasion when he went to pay an account. He was in the office at ten minutes before six, and the party in the office told him it was too late, and that he should come in the morning. Witness threatened to tell his masters, and then the party took the money.

Mr. *William Herbert*, Beau Street, stated that he was charged for gas during one quarter while he and his family were in the country, and no gas whatever was consumed. He gave orders before going away that no gas should be used, and he turned off the main. He knew that no gas was consumed during that time, but on his return a bill was sent in. He disputed the bill, and was subsequently informed that, as the examiner found the meter had not indicated any consumption during the time, he should be charged by computation with the corresponding quarter of the previous year. (Laughter.) He asked what he should do if his butcher and baker were to act upon the same principle, and send in bills computed in the same way? (Laughter.) The party laughed, and cancelled the bill. This witness expressed himself highly in favour of a meter-inspector, and gave it as his opinion, that if the price of gas were lowered, there would be a great increase of consumption, as it would be very largely used for shop fronts.

Mr. *R. A. M'Fie* said that he did not attend to complain of the Gas Company, but to furnish whatever information he could to the committee. In the last six months, from December to July, 1855, there was a singular and uniform increase in the consumption of gas in all his works as compared with the same time in 1854. In the Batchelor Street works, on 1,047,000 feet, there was an increase of 135,000 feet; in the Temple Street works, on 330,000 feet, there was an increase of 95,000 feet; in the William Street works, on 54,000 feet, there was an increase of 39,000, which was a prodigious per centage; in the cooperage, upon a consumption of 125,000 feet, there was an increase of about 1000 feet; and in the stables, upon a consumption of 25,000 feet, there was an increase of nearly 3000 feet. It was quite probable that there had been an increase of lights and in the hours of working in some of the works; but it appeared to him singular that there should have been such an uniform increase in all his works; and when the circumstance was noticed in connection with the establishments of other parties, it was reasonable to presume that there was something wrong. The complaint, however, which he wished to make was not against the Gas Company, but against the Guardian Society, and he brought it before the committee because, as a townsman, he wished to see the interest of Liverpool considered. His complaint was this—that whereas a number of years ago it was almost the universal practice in Liverpool to have a different rate for large consumers, that practice had been completely abolished about seven years since at the instance of the Guardian Society. Now, he did think that the Guardian Society, acting, no doubt, in the best

spirit for the public, overlooked certain matters that ought to have been taken into account. He believed that the uniformity of price which they insisted on was practically a great injustice to the large consumers, who, it would be found, whether in shops or manufactories, were actually paying the cost of having the gas taken into the houses of private individuals and gentlemen. He did not think that they were benefiting the poor by imposing so heavy a tax on the manufacturers of the town. His firm paid £150 a year more as a town-tax for gas than they would have to pay if they set up their establishment in Manchester, or any other town in the country. Almost everywhere they found that there was a discount given to large consumers—in some cases as much as 50 per cent.—and this was allowed in towns where there were no competing companies.

Mr. GLADSTONE: On what ground do you claim the indulgence to which, as a large consumer, you say you are entitled? Is it because you consume a much larger quantity than other establishments?

Mr. *M'Fie:* What I say is this, that the expenses ought to be reckoned not at the gross rate, but at the net; and that the net sum which the company obtained from us, is much higher than the net sum obtained from any other consumer in Liverpool; and that, as the price to us is the same as to all others, on that principle all dwelling-houses which consume comparatively little gas are getting their gas cheaper than the manufacturers or shopkeepers who consume a great deal of gas. I believe we are taxing the trade of Liverpool for the sake of the dwelling-houses of Liverpool.

Mr. GLADSTONE: I think the Guardian Society were justified in what they did, and acted on a just and sound principle. I do not see why a man, because he burns a large quantity of gas, is entitled to a discount. He does not burn it from any patriotic motive, but for his own interest, and he should therefore pay for it like everybody else. It does not matter whether the consumer is Smith or Jones; it is right and just that both should pay the same.

Mr. REAY observed that he remembered perfectly the circumstance to which Mr. M'Fie alluded. It would be impossible to allow a discount, and at the same time be just to all consumers; and it was therefore determined that the old practice should be discontinued.

The CHAIRMAN asked if he had noticed any difference in the illuminating power of the gas.

Mr. *M'Fie* replied that he could not say whether or not there was any difference in the illuminating power.

Mr. *Henry Thredder*, 14, Paradise Street, complained of deterioration in the quality of his gas, and very irregular supply. During the last fortnight, however, the light had been rather better. He also complained that he was made to pay 6d. for a little work done to the pipe by his son. In March, 1854, he was charged £1. 18s. 10d., and in March, 1855, £2. 4s. 4d., although there had been no increase in the amount of light consumed.

Mr. *Hugh M'Alpine*, St. Anne Street, complained of his bill having increased since the reduction in price. For the half year ending June, 1854, he was charged £1. 2s. 4d., and for the corresponding quarter of 1855, he was charged £1. 4s. 5d., the same number of burners having been used, and the lights kept up for the same time. Complained of high charges for men's time and fittings. The men were not looked after, and did not appear to attend well to their work. Thought it would be satisfactory if the supply of the fittings were in other hands than those of the Gas Company.

Mr. *John Ramsay*, 7, Derby Street, was charged for gas in a shop in the Byrom Street Arcade, during a period when no gas was burned at all. After he discontinued burning, the meter remained there about a month; but he was sure there was no escape, and the gas was never turned on. Was charged 2s. 7d. for another shop, where gas was burned, and 7s. for the shop where it was not consumed at all. (Laughter.)

Mr. *Thomas Green*, druggist, 22, Wavertree Road: For the quarter ending March, 1854, was charged £2. 18s. 2d., and that ending March, 1855, £2. 19s. 6d. There had been less gas burned during the latter period, as he was more punctual in closing his shop. For the quarter June, 1854, he was charged 13s. 2d., and for that ending June, 1855, £1. 12s. 4d. There was no greater consumption during the latter period. The fitters sometimes profess to do any repairs required, but do not do it; and sometimes he has been charged for a greater time than the fitters were at work. Is of opinion that it would be advantageous to the public to have the gas and fitting departments separated. The work would be both better and cheaper done. New work is done well enough, but the repair of old work is not usually satisfactory.

Mr. *Henry Power*, Great Charlotte Street, complained of irregularity in the supplying of gas, and inaccuracy in the register of the meter. He also complained of an overcharge in the removal of fittings from Temple Court to Great Charlotte Street. The gas stopped in Great Charlotte Street, and a man came and blew down the pipe, for which he charged 6d. (Laughter.) Witness said he could do that himself. Another man was sent, who also blew down the pipe, and charged another 6d. The gas did not burn still, and a man and boy came and put a bit of wood under the pipe, for which he was charged 2s. 4d. The gas still did not burn. He refused to pay, but they threatened to cut off his gas, and he had then no alternative. Is in favour of having meters manufactured by others than the company, and free from the company's control, except so far as testing them; but does not see how a meter-examiner can be of any service, as the meter is hermetically sealed, and no one can see the inside.

Mr. *Matthew Redhead*, Great George's Street, complained of an increase from £1. 2s. 2d. to £1. 10s. 2d. from the March quarter of 1854 to that of 1855, while his consumption was not increased. When the gas was 7s. per 1000, his charge was not so much for the year as now, although his consumption was the same. A progressive increase had taken place in his bills during the recent quarters.

Mr. *Thomas Corkhill*, 9, Brunswick Road, complained that in his dwelling-house the charge had been greater since the reduction in price. Excessive charge for meter rent—8s. a year—incivility, and want of attention also, made part of this witnesses complaint. Sometimes the lights went out in his place of business during winter evenings, and threw twenty persons out of employment, and when he complained at the office it was not attended to. He complained of heavy charges for fittings. Witness observed that he had noticed where poor people required one light, the company would not put it in unless a deposit of 8s. or 10s. was paid. This money remained in their hands; they paid it back when they thought proper, and they allowed no interest.

Mr. GLADSTONE: None?—indeed!

Witness: I have also known instances where tenants have been defaulters, and absconded in the company's debt, and the company refused to supply the in-coming tenant with gas, unless he first paid the old tenant's debts.

Mr. GLADSTONE: Is that certain?

Witness: Oh, quite so!

Mr. GLADSTONE: For fear the new tenant should become affected with the same complaint, I suppose?

Witness: It is making honest men pay for the dishonest.

Mr. GLADSTONE: It is, indeed.

Witness: I have also known the company to send to places of amusement where a balance was due to them, and take advantage of a particular hour when something was going on to turn off the gas. (Laughter.) Not even the sanctity of religion has always escaped their rapacity. I have known them to go to a chapel where there has been a particular meeting, and stop the supply until the bills have been paid. I can give proofs of it. I can instance the Roman Catholic Chapel in Crosshall Street.

Mr. CROSTHWAITE: During the divine service?

Witness: While some great meeting was going on. They boasted of it afterwards—of having left them in the darkness. That is what I call rapine. (Laughter.) The witness also complained of parties who had no badge or token of authority whatever coming into houses and inspecting the meters, and suggested that they should have an authority of some kind to exhibit.

Mr. *William Jones*, 19, Berry Street, complained of overcharges fot fittings and time.

Mr. *Thomas Quail*, 46, Mill Street, stated, that from April to July, 1854, his charge was £1. 2s. 8d.; and for the same quarter of 1855, £1. 5s. 1d., although in 1854 the gas was burning during the night, which was not so in 1855. From January to April, 1854, the charge was £2. 7s. 5d., and in the corresponding quarter of 1855, it was £2. 17s. 6d., although there was no increased consumption.

Mr. *William Aiken*, 41, Great Charlotte Street, stated, that for the December quarter of 1848 his gas bill was £1. 13s. 3d., while in the same quarter of 1854, it had increased to £3. 11s. 3d., without any increase of consumption. For the six months ending June, 1854, the charge was £2. 19s. 8d., and for the corresponding period of the present year it was £3. 16s. 7d. The gas had been of rather a better quality during the past month. The witness mentioned that when he complained at the gas-office, and said the meter must have gone wrong, a party in the office said, if it were tied to a mad dog's tail it could not go wrong. (Laughter.)

Mr. *J. R. Jeffery*, of Jeffery, Morrish, and Co., Compton House, stated, that from the 11th of January to the 17th of April, 1854, his gas account was £67. 7s. 2d.; from the 26th of January to the 4th of April, 1855, it was £78. 6s. 11d.; from the 17th of April to the 4th of July, 1854, the account was £38. 18s. 5d., and from April 4 to July 5, 1855, £44. 16s. 4d., notwithstanding that there was a reduction of price during the last year, and he had had no increase of consumption. He did not see why any meter-rent should be charged, or why the Gas Company should be entitled to do what no other class of tradesmen could do—charge for their own measures. He thought the company seemed to have some doubts of their own meter-tests. He was in favour of having an inspector of meters—a party quite independent of the company. He thought the charge for meters was excessive, which naturally arose from the company having a monopoly. If they were to continue gas-fitters, he thought there should be kept a separate account under that head. In the manufacturing department of the fittings, he understood that the company had suffered a very severe loss by bad management. He was informed that this loss went to the amount of £3000. If this was correct, it would amount to 7½ upon the whole consumption of the borough, arising, not from the company's being gas manufacturers, but gas-fitters. He suggested that the chairman of the committee should write to the Gas Company, requiring to be furnished with an account of the number and salaries of their *employées*. When the amalgamation took place, it was thought that the services of some of those gentlemen would be dispensed with, but they were still retained, and the expenses of the company swelled by the amount of their salary. As to the illuminating power of the gas, he noticed that it had become decidedly better—he would say fully one-third better—just before the tester was brought down by the committee. He noticed that circumstance particularly, and his observations were confirmed by several of the superintendents in his establishment. It was quite a mistake to suppose that a second company would be a competition at all, but it was possible to place the present company in such a position that would confer benefit both on the proprietary and the public. As to the present price of gas, he thought it too high, and he had no doubt that within the borough of Liverpool it could be supplied at 3s; and, lastly, he thought that the company should be called on to furnish a return of the quantity of land held, but not used, by them.

Mr. EVANS begged to be allowed to make a few remarks. There was no manner of doubt that the system of overcharges by the company had been fully established, but there were other points in the investigation on which the public were equally interested. The company were interested in paying themselves 10 per cent.; they were interested in paying that per centage on as large an amount of capital as possible; and they were also interested in employing a great

number of persons at handsome salaries, inasmuch as they were paid not at the expense of the company, but of the consumers. Now, the interest of the consumers, in these particulars, was not the same as the company's, and he, therefore, hoped that these point would receive the particular attention of the committee.

The CHAIRMAN replied that they would, as they constituted part of the inquiry for which the committee was appointed.

Mr. *Jeffery* observed that the company had still power to borrow £150,000, and care should be taken that they did not, unless through the greatest exigency, raise that sum. It would materially alter the position of the public in the matter.

Mr. *John Carter*, 26, Redeross Street, complained of deterioration of quality in the gas. He also complained of increase in his bills, without corresponding increase of consumption. For June quarter, 1854, his bill was £1. 1s. 8d., and for the similar quarter this year, notwithstanding the reduction, it was £1. 3s. No matter how the meter would err, the company invariably acted as if it were quite infallible.

Mr. *John Richmond*, 3, Paradise Street, complained of a deficiency in the supply of gas, and an increase in the bills since the reduction of charge. From March to June, 1854, he was charged for 168,000 feet; and from March to June, 1855, he was charged for 198,000 feet, although in the latter period there had been no increase in the number of lights, and he had altered some twelves for fours. From December to March, 1854, he was charged £13. 0s. 3d., and for the corresponding period of this year, £13. 18s. 6d. Complained of overcharge for fittings and men's time.

Mr. *Henry Rooke*, 24, London Road, complained of a deficiency in supply, especially on Saturday evenings.

Letters from Mr. *Cripps*, Bold Street, complaining that in the second quarter of 1854 his gas bill was £2. 2s. 8d., and for the corresponding quarter of 1855, £3. 10s., although there was no increased consumption; from Mr. *M'Kenzie*, Brunswick Road, complaining of an increase of 32 per cent. in cost during the past year; and from Mr. *Charles Inman*, Everton, stating that the quality of the gas in his house had been deteriorated; and that, whilst in 1842, when gas was 7s. per 1000 feet, his year's bill was £5. 7s. 5d., in 1852, with gas at 4s. 6d., it was £9. 1s. 6d., although he was not aware of any increase in consumption. The latter writer expressed himself in favour of a meter-inspector in the service of the public.

The examination of the witnesses in attendance having been gone through, a letter was read from Mr. Flintoff, in reply to one from Mr. Barlow read at the last meeting. Mr. Flintoff contended, in his letter, that he had not unfairly represented Mr. Barlow's experiments in 1844, and he taxed the latter gentleman with being the editor of a publication which was established to support a monopoly in gas companies.

We cannot avoid remarking upon the want of sufficient attendance on the part of members of the committee. The proceedings of the day opened with four members and the chairman, and the numbers kept gradually diminishing until, for more than an hour before the adjournment, there was only one member (Mr. Crosthwaite) present with the chairman.

SEVENTH DAY,—SEPT. 17.

The committee met again this day, Mr. KITCHEN in the chair. The other members present were Messrs. Bradley, Sheil, Clint, Hornby, R. Gladstone, and Crosthwaite.

The CHAIRMAN opened the proceedings by announcing that they would go on with the same class of evidence as had been tendered in the previous examinations.

Mr. *John Wren*, of 11, St. George's Crescent, was first called. He complained of overcharge. His quarter's bill for 1853 was 5s. 7d; for 1854, 5s. 2d; and for 1855, 14s. 10d.

Mr. *Livesey*, of Great Charles Street, complained of gradual increase in his gas bills spreading over several years. In 1854, he was advised by the collector to drop a note to Mr. Steel, which he did, calling attention to the increase in his gas bills. In 1847 his bill was £26. 10s. 7d; in 1848, £27. 0s. 1d.; in 1849, £28. 15s. 1d; in 1850, £30. 5s. 7d.; in 1851, £31. 5s. 4d.; in 1852, £32. 0s. 3d.; in 1853, £33. 1s. 2d.; showing an increase in these years of £6. 15s. 7d. Last year it was reduced to £29. 1s. 8d. Mr. Steel told him that the company had been supplying gas to the outposts of the town, and there might consequently be a higher pressure on the town meters. His quarter's bill in 1854 was £4. 18s. 9d., and in 1855 it was £6. 2s.

Mr. *Alexander Miller*, of 17, Ashton Street, Pembroke Place, produced a note, addressed to Mr. Steel, complaining of the increase of his bills and the defective nature of his meters. He wrote twice, and did not get any reply to his letter. He then called at the office, and, after considerable trouble, he found he could get no satisfaction. His bills showed a decrease in the present year. Up to March, 1854, his quarter's bill was £1. 11s. 2d., and for a corresponding quarter this year it was 14s., although he had more business now.

Mr. *Andrew Robinson*, Manchester Street, complained of overcharge. The mistake in his case was, that he was charged by way of computation, to make his bill equal to the quarter of the preceding year. His bill this year had grown to 10s. 7d., under the same circumstances of consumption.

In answer to Mr. EVANS, he stated that the Gas Company's servants never gave him any instructions as to putting water in the meter.

Mr. *George Upton*, 45, Berry Street, complained of an increase in his bill. The bills for the two years showed an increase of £1. 10s. 5d. over £1. 5s. His bills had gradually increased since 1852, although his consumption had decreased.

Mr. *A. Jones*, druggist, Richmond Row, produced bills showing a discrepancy in the amounts: he had not burned more gas.

Mr. *Thomas James*, King Street, Edge Hill: From April to July, 1853, he was charged 2s. 8d.; in the same period of 1854 he was charged 3s. 3d.; and in 1855, 6s. 2d. The last charge must have been wrong, because he had only used two burners instead of three, as formerly.

Mr. YATES attended before the committee to state that a Mr. Defries had invented a dry meter, which would not vary, he believed, in twenty years. The peculiarity of its construction would prevent more gas being registered than was actually consumed, and the position in which it was placed would not have any influence whatever upon it. Mr. Yates wished to know when it would be desirable for the agent of Mr. Defries to exhibit his new meter to the committee?

Mr. GLADSTONE had seen this invention, which appeared to him to be a very clever thing. The Gas Company, he believed, had ordered some of them.

Mr. YATES said he should have one of these meters at his office this week.

The CHAIRMAN said the committee would inspect it; but before doing so, would send Mr. Yates notice of their intention.

The CHAIRMAN said Mr. James Bowman, of Park Road, had sent in his account, showing a difference between 12s. 8d. last year, and 17s. this year.

Mr. *Charles Bamford* produced bills which showed a difference of £3. 11s. 4d. and £3. 12s. 10d., and of £1. 6s. 9d. and £1. 8s. 5d. He believed the excess arose from the increased pressure. He sometimes watered the meter himself. He had been told by a man connected with the company to put a jug of water in the meter occasionally. He had put in as much as a quart at once. The gas people had put water in for him for the last four years.

Mr. EVANS (who attended as solicitor for the Guardian Society) said it would be as well for him to state, for the convenience and information of the public, the proper method in which the water ought to be put into the meter. First of all, they should take off the gas entirely, and then take off the the three screws—the one at the top, the one at the side, and the one underneath. The one underneath is a syphon, the one at the side is the level, and the one at the top is the place where the water should be poured in till it runs out at the side. Then it is properly charged, provided the meter is perfectly level.

Mr. *Thomas Gilbert*, jun., Mill Street, said that he had neither had more lights burning, nor yet had he burnt longer than usual, and yet, whilst in the first quarter of 1854 he was charged £5. 9s. 2d., in the corresponding quarter of this year he had paid £5. 18s. 6d., which showed an increase of 9s. 4d. In the second quarter of 1854 he had paid £1. 19s. 5d., whilst in 1855 he was charged £2. 10s. 1d. Repairs done by the company were very badly executed. A man in the employ of the company had told him that the reason of this was that the better class of workmen went elsewhere, where they could get better pay. The same man had also told him that the company's servants took less pains with the repairs of fittings which had been put in by other parties than with those furnished by the company.

Mr. *Owen Elias*, Derby Road, said his gas bills were more than they were when the price of gas higher. He had had extra lights, but still the increase was excessive.

Mr. *Robert Easdale*, 53, Byrom Street, said he had to complain of the excessive charges for fittings made by the company. They (the company) had, on one occasion, cut off his supply because a neighbour alleged that there was an escape on his premises. The gas was not turned on again until he had submitted to have his pipes examined, for which he was charged the wages of two men for a day and a quarter.

The CHAIRMAN here asked Mr. Reay whether he was satisfied that the witnesses already examined had substantiated the fact of the overcharges on the part of the Gas Company.

Mr. REAY admitted that he was satisfied.

Mr. EVANS observed that they might go on from day to day examining witnesses, without arriving at any other conclusion than that to which they had already arrived at—that overcharges had been made.

The CHAIRMAN then intimated that this particular class of evidence would be discontinued.

This concluded the business, and the committee adjourned.

EIGHTH DAY.—SEPT. 24.

This day the committee of the council met in the Council chamber, Mr. KITCHEN (the chairman) presiding. The other members present were, Messrs. Shiel, Crosthwaite, Clint, Bradley, Hornby, and Stewart.

The CHAIRMAN said: To-day we propose going on with the evidence of Mr. Taunton, who has been down here for several weeks past examining and testing meters; and, as he has now gone through a very considerable number of those meters which have been taken from premises indiscriminately, I think the number of meters examined might be taken as a fair indication of the state of the meters of the whole town. Mr. Taunton will now give the committee a full report on every meter which he has examined.

Mr. TAUNTON then read the following report:—

"13, *Belle Vue, Chester Street, Birkenhead, Sept.* 24, 1855.

"Gentlemen,—Before giving a tabulated statement of the results attained by testing the meters of Liverpool, I think it necessary to remark, in consequence of certain newspapers in Liverpool and elsewhere having unscrupulously stated that I am the tool of a party interested in getting up an opposition gas company, and forwarding the sale of some particular gas-meter, both of these assertions I most distinctly deny, and it remains for those that made them to prove them.

"The committee will allow me to state again, that I hold my appointment as meter-inspector directly from the corporation of the City of London; and, as the act of Parliament of the Great Central provides, I am by that company paid a fixed salary, and entitled to a fee for every meter tested, and each time a meter is re-tested.

"My appointment as meter-inspector for the City of London I principally owe to the votes of those members of the corporation who were opposed to the establishment of the Great Central.

"My position as meter-inspector for the corporation of the City of London is the sole cause, I know, of my being now engaged in the present investigation, the Liverpool Guardian Society having applied to me to take testings of the gas-meters of Liverpool.

"I find the meters in general use in your borough are water meters. To give weight to this inquiry, I may state that, previous to holding my present appointment as meter inspector to the corporation of the City of London, I held the appointment of gas-meter inspector to the Imperial Gaslight Company, the largest and best-conducted gas company in the country, where I had every opportunity of becoming acquainted with every description of meters, both wet and dry; and, although at that period the company used almost exclusively wet meters, they are now purchasing extensively dry meters.

"Before leaving London for Liverpool, I provided myself with accurate-tested meters, both water meters and dry meters. These meters I submitted to Mr. King, as well as to Mr. Edwards, his deputy; and before these gentlemen the meters brought from London were submitted to a severe testing, and pronounced by them as accurate measuring gas-meters. Mr. King expressed that he could see no objection to the use of the meters referred to in testing the meters in Liverpool.

"I commenced my testing of meters in July, as the tabulated statement which I am about to hand in will show; in which I give the name of the consumer, the place where the meter was tested, the manufacturer of the meter, the per centage for or against the consumer; also, how I found the meters fixed, &c.

"After I had made some progress in testing the Liverpool meters with the meters I brought from London, Mr. King objected to my using them, when he saw the results of my testings. I therefore procured from Messrs. Smith and Phillips, water meter manufacturers, of Snow Hill, London, a testing gasholder, which I graduated by the City of London standard, being determined to do justice to all parties, and which may be regauged by Mr. King, or any one deputed by him.

"I would now draw the committee's attention to the fact that the same results are obtained by testing with the gauged gasholder as I obtained by testing with the meters I brought from London, as will be seen by the results of the meters tested in St. John's Market. I would also state to the committee that I have taken no testings of the various dry meters in use in Liverpool, although Mr. King promised I should; and I have made repeated applications without being able to get any information where they are in use; but of this the committee will form its own opinion.

"The commitee cannot fail to observe that a large proportion of the meters I have examined were found to be overcharged with water, and of course registering more gas than was consumed. I do not attribute this to any improper motive, but rather to the fact that the object of an inspector is to have as few complaints in his district as possible: and it is, in this respect, to his interest to keep the meters well filled up; and this instruction is given to consumers without the necessary caution to remove the side-plug; for, in only three or four cases have I found the consumer know the use of the top or bottom screw till they have been obliged to send to the gas-office, having filled the meter, and overflowed the syphon, and could get no light; and this will fully account for some of the different quarters varying from 20 to 30 per cent., and some even more.

"I cannot here forbear making one remark upon a letter dated 'Gas-office, Newington, August 22, 1855,' addressed to your town-clerk, in which the Gas Company state the inconvenience they have felt by having withdrawn the officers for a fortnight, and thereby not having had the opportunity of inspecting and correcting the meters.

"With regard to the inspection of meters, I think my report will show how little has been done; and, had the inspectors visited them, I do not think I should have found so favourable for the consumer, for it is admitted by the company that the men they send to water the meters do not understand what effect it will have upon them; and although it was stated to this committee by Mr. Clegg that he did not think there was much the matter with the meters, yet it was admitted in the Gas Company's letter that the meters require correcting or adjusting once a fortnight.

"I have in my tabulated statement condensed as much as possible the remarks made by consumers, thinking it would occupy too much of your time; and now conclude this report by submitting two or three matters for consideration; and, first, I would suggest that the gas consumers of Liverpool should be allowed to use any meter they may desire to use, provided the Gas Company can show no objection to it; and, also, that a consumer may purchase his own meter, if he wishes to do so.

"It would be considered, I am persuaded, very unjust to the Liverpool public, were every butcher, baker, and licensed victualler allowed to make their own weights and measures, and to use them, without having them first examined; yet it must be considered much more indelicate in the Liverpool Gas Company doing so, on account of their being the manufacturers of the article they sell; and I find it is the only company in the three kingdoms that does so. And, were the butcher, baker, and licensed victualler permitted to manufacture their own weights and measures, there would be no parallel in the cases, because the consumer could purchase where he believed he could obtain the fairest weights and measures. Not so with the gas consumer; he has no alternative but to take the gas the company manufacture, and to have it registered by a meter made by themselves.

And, secondly, I think it advisable that the corporation of Liverpool should appoint a public officer to test the meters used in your borough—a person qualified to give every explanation to the consumer, so that the public may be fully acquainted with the working of the meter. It would be, therefore, requisite to have an office provided, and all the apparatus necessary for testing procured; and I would also suggest that no meter should in future be fixed till tested by him; that he should be paid a fixed salary; and that he should receive a fee for testing a meter in use, the fee to be paid by the company if found to be incorrect, and by the consumer if correct; and an extra fee should be charged should it have to be tested on the consumer's premises.

"It may be also desirable that the public officer should test daily the quality of the gas supplied, and report thereon when called upon so to do; and that pressure registers be employed at all the public offices of the corporation.

"I cannot conclude this report without calling the attention of the committee to a matter which I think they will consider of importance in reference to this subject.

"It will be in the recollection of this committee that, at a meeting some weeks since, a question was asked by one of the members having reference to a dry meter in St. John's Market, fixed as a check meter on the wet one. It was then stated that the dry meter was found to register more than the wet one. I was also told this by the Gas Company. Now, I find the dry meter was removed to the gas-office about the month of March or April last, said to be out of action. This meter, I find, has not yet been repaired; and as this is not the only one of that maker's out of repair in this borough, perhaps I may be allowed to suggest that the party be written to, requesting him to furnish the committee with the nature of the defects and the cause.

"I have taken some pains to get the consumption registered on the two meters, wet and dry, for two years, which may be depended upon, the officer in the market recording them every quarter, when the gas company's officer took the state of the meters.

"I was the whole of Friday night, after the market closed, testing this meter; but I found the company's men had been some weeks since, and drawn off a large quantity of water, so that I found it only three-quarters per cent. fast.

"The other meter supplying the market I tested in the night of Tuesday last, when I found it registering 5¼ per cent. fast; and it is from this meter that the largest quantity is registered. I wish it to be distinctly understood that both these meters were tested by the gasholder brought from London, and therefore the accuracy cannot be questioned, but must confirm all former testings.

"To this report I append a tabulated statement of the comparative consumption of each meter, from which you will at once perceive that the wet is in excess to a considerable amount.

"In this statement I also give the results of the testings of four dry meters, which I had the opportunity of submitting to the company's apparatus. They were taken down about the month of March or April last, and were examined by the company's officer. They are still in store; why they have not been re-fixed I stay not to inquire or give an opinion.—I have the honour to be, gentlemen, your obedient servant.

"FREDERICK TAUNTON.

"P.S. I wish it to be distinctly understood that no testing recorded in this report has been taken but in the presence of one or more officers of the Liverpool Gas Company."

Mr. Taunton also presented a tabulated statement of the result of his test of each one of 228 meters in the town. Of these, 12 were found to register from 1 to 9 per cent. in favour of the consumer, and 30 from ¾ to 10 per cent. against the consumer. The remainder of the meters, 186, had been tested only with a view to ascertain the quantity of water in excess or otherwise put into the meter. Where there was an excess or overcharge of water, the meter registered against the consumer; where water was required to be put into the meter, the registration was against the company. Eight meters were found to be correct, but three of them were leaning forward, which would cause them to register against the company; whilst in a few instances the meter had been put level before Mr. Taunton inspected them, having been against the consumer. The meters found overcharged numbered 90, whilst those requiring water numbered 88. Mr. Taunton remarked, that he had arranged to test the meters at the establishment of Mr. Morrish, Lancaster Buildings, at seven o'clock in the morning; but that he was prevented doing so, his intention having become known at the gas-office, and men sent at six A.M. to adjust them. He had also tested four dry meters in the Gas Company's stores: one was ½ per cent. fast; a second, ¾ per cent. fast; a third, 1 per cent. fast; but the fourth was 1 per cent. slow.

Mr. SHEIL said, he noticed in the report that Mr. Taunton had stated the exact number of cubic inches of water taken out of the meters by consumers themselves. How did he ascertain that?

Mr. TAUNTON said, he asked the persons in what vessel they had drawn off the water, and they brought him a jug or a saucer, and he measured their cubic contents.

Mr. STEWART asked if the average of the meters that were "fast" was greater than those that were "slow."

Mr. TAUNTON replied in the affirmative.

In answer to Mr. CROSTHWAITE, Mr. TAUNTON said the number of "overcharges" and the number of meters requiring water were about equal.

In answer to the CHAIRMAN, Mr. TAUNTON stated that he had always adopted the suggestions of Mr. King, or whoever was with him, when he tested the meters, as to the cross-testing, re-testing, &c. He had found a few meters correct. The greatest range of error he found from "slow" to "fast" was 19 per cent.—10 per cent. fast and 9 per cent. slow. He had found these two extremes in one establishment, Mr. M'Fie's sugar refinery, where the water that came out of one of the meters was 101 degrees. The heat would cause expansion of the gas, and the meter would consequently register more. Heat would not affect a dry meter. If he remained months in Liverpool, he did not know that he could arrive at any more satisfactory result with regard to the testing than he had already done. There was not only negligence on the part of the company's servants, but when they did attend to the meters, they did not adjust them properly.

Mr. BRADLEY: Can the parties who have been overcharged by the Gas Company recover the overcharge by bringing an action against the company?

The DEPUTY TOWN-CLERK: If you can prove the overcharge, no doubt you can; but a very good, and therefore a very expensive, case would have to be got up.

Mr. REAY: There is *primâ facie* evidence in the face of their own bills.

M. TAUNTON said he would not mind contesting the matter.

In answer to the CHAIRMAN, Mr. TAUNTON said that in London, if the meter registered against the consumer, he gave that party a certificate, and the Gas Company allowed the consumer for the overcharge for the whole period during which he had consumed gas registered by that meter.

Mr. REAY said, the Gas Company could be proceeded against in a very summary manner. By act of Parliament, the Gas Company could cut off any person's supply who refused to pay his gas-bill. Some of the consumers who had been overcharged might refuse to pay; the company would cut off the gas, and the person might tender what was a fair sum, considering the previous bills he had paid; at the same time giving the company notice that he required again to be supplied with gas. If the company did not put on the gas again, they could be summoned before the magistrates, and fined £5 per day for not supplying gas. The onus lay on them to prove that they had good reasons for cutting it off.

The CHAIRMAN said that was all very well, but the fine would not come out of the dividends; it would virtually be paid by the consumers.

Mr. REAY said his suggestion was only to remedy an expensive process of law.

In answer to Mr. REAY, Mr. TAUNTON said that in several instances he had found the gas-meters overcharged only a day or two after the company's servants had pretended to have adjusted them.

In answer to the CHAIRMAN, Mr. TAUNTON said he had found only one meter correct, after the gas people had been adjusting it. Nineteen per cent. was the greatest range of error he had discovered in working meters. He had not made any experiments as to the quality of the gas, not having had the convenience for that purpose.

The CHAIRMAN: Do you know that some meter-makers, to get a large company's custom, will make meters one, two, or three per cent. fast?

Mr. TAUNTON: Oh, yes; meters have been made eight or ten per cent. fast to suit the gas companies. If a meter is out of order, the companies—who don't keep the necessary apparatus to test them—send them up to London to be tested, if the consumer will pay all the expenses; and as they seldom will do so, such cases rarely occur, and detection is not frequent. When he first began his inspection, he did not find many cases where the company's servants had been down to adjust the meters; but when he came towards the end of his labours, he found that some one from the gas-office had been nearly to every meter.

In answer to a remark from the CHAIRMAN, Mr. REAY said he thought plenty of work could be found for Mr. Taunton for three months to come; but so far as his labours had already gone, he thought Mr. Taunton had sufficiently shown that there was something erroneous in the meters.

The CHAIRMAN said that at St. John's Market, some time ago, the corporation had put up a dry meter to act as a check upon the wet meter of the Gas Company. It had lately been taken away by the company; why, he thought Mr. Taunton could not show them.

Mr. TAUNTON read a tabular statement, which showed that, from March 1853 to March 1854, the quantity of gas consumed in St. John's Market, as per wet meter, was 681,000 cubic feet, whilst by the dry meter it appeared to have been 645,900; thus showing a difference in the quantity registered by the two meters of 35,100 feet—the dry meter having, in one instance, when the water was low in

the wet meter, which would cause it to register less than was consumed, registered an excess of 3200 feet.

The CHAIRMAN said this showed that the wet meter registered 5½ per cent. more than the dry one.

Mr. HORNBY asked when the committee would be likely to report to the council.

The CHAIRMAN said at the council meeting in October.

Mr. CLINT moved, and Mr. CROSTHWAITE seconded, a vote of thanks to Mr. Taunton for the pains he had taken in testing the meters in the town, which was carried *nem. dis.*

CITY OF LONDON COURT OF SEWERS.

OCT. 9TH, 1855.

ELECTION OF A MEDICAL OFFICER OF HEALTH FOR THE CITY OF LONDON.

The Commissioners of Sewers for the City of London met this day in the Court of Common Council, Guildhall, for the purpose of electing a properly qualified gentleman to fill the above important office, rendered vacant by the resignation of Mr. Simon.

Deputy PEACOCK occupied the chair. There was an unusually large attendance of commissioners.

After reading the minutes of the previous Court,

Deputy HARRISON rose, and complained that the report of the committee, containing the names of the properly qualified candidates, and the duties of the medical officer, which, on his motion, it was agreed should be printed and sent to each gentleman, had not been received. The only way now to remedy this was to request the attendance of those gentlemen while that portion of the committee's report was read, so that no misapprehension as to the nature and conditions of the office might hereafter arise.

The CHAIRMAN admitted that an omission, for which he was in part responsible, had taken place, and he concurred in Deputy Harrison's suggestion.

Alderman FAREBROTHER thought the candidates were already sufficiently aware of the nature of the duties which would be required of them.

Deputy HARRISON said that important additions were made at the last court, and as they would involve a considerable sacrifice of the time of a professional man, it was very desirable they should be clearly understood, so that any candidate objecting might be at liberty to retire before the court proceeded to the election.

Alderman FAREBROTHER felt that, under the circumstances just named, it would perhaps be best to postpone the election. (No, no.)

Deputy OBBARD said the commissioners had come prepared to perform a public duty, and no advantage could be gained by defering it.

Mr. T. H. HALL supported Deputy HARRISON's suggestion.

Mr. H. L. TAYLOR said there were difficulties in the way of carrying out the proposal, because some of the candidates might not be present.

Deputy DAKIN thought that the absence of either of those gentlemen would be a strong *primâ facie* reason why he should not be elected.

The proposition was then agreed to, and some routine business having been disposed of, the names of the gentlemen who were candidates for the office were called over, as follows:—

Joseph Arthur, Esq., M.D.	Dr. Lloyd.
John Challice, Esq., M.D.	Dr. James McIntosh.
Edward J. Chance, Esq.	Wm. Odling, Esq., M.D.
R. H. Goolden, M.D.	Henry Stevens, Esq., M.D.
E. H. Greenhow, M.D.	Edward Smith, Esq., M.D.
Geo. Glover, Esq.	Dr. Slight.
Francis Hutchinson, Esq., M.R.C.S.	A. C. Tweedy, Esq.
Arthur H. Hassall, Esq., M.D., F.L.S.	Alex. Ure, Esq.
Henry Letheby, Esq., M.B.	R. D. Walker, Esq., M.R.C.S.

Messrs. Challice, Goolden, Greenhow, Hassall, Letheby, Lloyd, Stevens, and Smith were present, and were invited to take their seats in the court.

The CHIEF CLERK said he had received communications from Messrs. Hutchinson and Tweedy, requesting to withdraw; also a letter from Mr. Thompson to the same effect. This gentleman's name did not appear in the list, as his testimonials were not received in time.

Mr. ELLIOTT complained that the names of two other gentlemen had not been called over.

The CHIEF CLERK said the reason was that their testimonials were not sent in till the day previous.

Mr. ROSS thought it was a pity that, for want of compliance with a matter of form, any duly-qualified gentleman should be excluded. He would move that the names of the two referred to by Mr. Elliott (Messrs. Bristow and Richardson, as we understood) should be read, and included in the list of candidates.

Deputy HARRISON objected. The court had appointed a committee to examine the testimonials and report upon the qulifications of the candidates who had offered themselves, and they were met this day to act upon that report.

Deputy LOTT said there was nothing in the committee's report about "qualifications."

After a few remarks from Mr. ELLIOTT, Mr. TAYLOR, and Sir PETER LAURIE, Mr. Ross expressed his unwillingness to divide the court on the question, and withdrew his motion.

THE CHIEF CLERK then read over the duties of the Medical Officer of Health. They are as follows:—"To inspect and report periodically upon the sanitary condition of the City; to ascertain the existence of diseases, more especially epidemics; increasing the rates of mortality; and to point out the existence of any nuisance, or other local causes, which are likely to originate and maintain such diseases, and injuriously affect the health of the inhabitants of the City. To take cognisance of the fact of the existence of any contagious or epidemic disease, and to point out the most efficacious mode ef checking or preventing the spread of such diseases. To point out the most efficient modes for the ventilation of churches, chapels, schools, lodging-houses, and other public edifices within the City; and to perform any other duties of a like nature which may be required of him or them. To superintend the house-to-house inspection throughout the City of London, as may be necessary, or may be required by the commissioners. To attend upon and give evidence before the magistrates, &c., whenever necessary, in support of any complaint originating from, or connected with, the duties of his office. To keep proper account of the various matters which he officially brings before the commissioners. And to attend every meeting of the court, and all committees at which he may be required, whether to advise or to view with them premises whereat sanitary measures are under consideration."

The CHAIRMAN inquired whether the candidates present were prepared to fulfil those conditions, and was answered in the affirmative.

Alderman WIRE suggested that, to the above conditions, should be added—"and such other duties of a similar nature which are now or hereafter by any act of Parliament may be required."

Mr. DAKIN thought that this was unnecessary. The commissioners themselves were bound by act of Parliament, and so must all their officers be.

The CHIEF CLERK said the following were the regulations for conducting the election, which had been already agreed to:—That the candidates be reduced to three by a show of hands, to be taken at one o'clock precisely. That immediately thereupon the three so elected be reduced to two by a show of hands. That the election of one from these two be taken by a show of hands, unless a poll be demanded. That in case a poll be demanded, it be thereupon taken at once, and be closed so soon as the commissioners then present shall have voted.

Mr. DE JERSEY inquired whether there was any bye-law affecting the commissioners respecting those eligible to vote? If so, it should be read.

The CHAIRMAN replied in the negative.

Mr. ROSS said he thought that before proceeding to the election they ought to rescind their standing order, No. 15, which stated that no person should be eligible to be a candidate for this office unless he be free of the City. It would be a pity that a gentleman otherwise qualified should be rejected on this ground. (Hear, hear.) He moved its suspension.

Alderman WIRE seconded the proposal, which was carred *nem. con.*

Mr. DAKIN said the duties of the office had been read over to the candidates, but nothing had been said about the emoluments.

Mr. ABRAHAMS replied, that the amount of the salary was stated in the advertisements.

The court then proceeded to the election. At the first show of hands, Messrs. Letheby, Odling, and Greenhow were chosen; the numbers being:—Dr. Challice, 14; Mr. Chance, 1; Dr. Goolden, 4; Dr. Hassall, 11; Dr. Letheby, 30; Dr. Lloyd, 15; Dr. Odling, 27; Mr. Stevens, 3; Mr. Ure, 3. Dr. Greenhow and Dr. Smith having an equal number of votes, viz., 22 each, their names were proposed again; when there appeared for the former, 26; and for the latter, 23.

On the show of hands for reducing the three candidates to two, the numbers were:—For Dr. Letheby, 31; Dr. Odling, 27; Dr. Greenhow, 25.

On the question that Dr. Letheby or Dr. Odling be elected.

Mr. B. PHILLIPS rose, and proposed that the court proceed by poll; that the doors be closed, and only those members now present be allowed to vote.

This was agreed to, and Alderman Wire and Mr. Deputy Obbard being appointed scrutineers of the votes,

At the close of the poll, the CHAIRMAN announced that the following was the result:—For Dr. Letheby, 38; Dr. Odling, 26: majority for Dr. Letheby, 12.

Dr. LETHEBY was then called forward; and the chairman briefly intimated to him, that by the choice of the commissioners he had been elected Medical Officer of Health for the City of London; and expressed a hope that he might long retain the office, to the advantage of the public and the satisfaction of the court.

COMMERCIAL GAS COMPANY.

The Shareholders of this Company held their usual Half-yearly Meeting on Thursday, the 4th inst., for the purpose of receiving the report of the directors, and the declaration of the dividend on the profits of the half year.

CHARLES SALISBURY BUTLER, Esq., M.P., presided.

The SOLICITOR (Mr. THOMAS) having read the advertisement convening the meeting, the minutes of the previous meeting were confirmed, and the seal of the company affixed to the register of proprietors.

The CHAIRMAN, having inquired if any reporters of the public press were present, was informed that there was one gentleman acting in that capacity, but that he obtained admission in consequence of his being a proprietor.

A discussion then arose as to the desirableness of opening in future the meetings of the company to the press; Mr. Box and Mr. Gray having ably maintained the wisdom and propriety of such a course, it was unanimously resolved that reporters should be admitted.

The following report of the directors and statement of accounts were then read:—

"TO THE SHAREHOLDERS OF THE COMMERCIAL GAS COMPANY.

"Your directors have convened this meeting pursuant to the provisions of the act, by which it is enacted that an half-yearly ordinary meeting shall be held sometime in the month of October every year.

"The accounts, together with the usual report of the company's superintedent as to the state of the works, will be presented and read.

"The contracts for the construction of apparatus for the improved mode of purification of the gas manufactured by the company, referred to in the report of the directors to the last annual ordinary meeting, are being satisfactorily carried out, and will be shortly completed.

"The shareholders may be aware that the parish of West Ham, in Essex, was a portion of the district supplied by the British Gas Company before the amalgamation

with this company, and after such amalgamation it has formed one of the extreme points of this company's district.

"The West Ham Gas Company, being a company whose shareholders are consumers, has for some time past come into active operation: and thus a competition has arisen between the two companies in the district supplied by the latter.

"In consequence of the inadequate size of the pipes, and the small number of consumers, the West Ham district has always been less remunerative to the company than the other parts of their limits. The effect of the competition of the West Ham Company has been to render the operation of the company in that parish altogether unremunerative.

"It will be observed that the supply to West Ham has been made from the station at Bow, which, as has been intimated in former reports, the directors, with the view of diminishing the working expenses of the company, contemplate removing.

"Nothing can be clearer than the principle now recognised by Parliament, that the public cannot be so well supplied with gas where a double set of pipes, a double staff, a double capital, and double leakage are incurred; and if this principle holds generally, it applies with greater force in a district which affords inadequate remuneration to a single company.

"Under these circumstances, a negotiation was opened between the respective boards, and it was, after much discussion, determined that it was for the ultimate benefit of the consumers and shareholders of both companies that, with some slight exceptions, that part of the company's district which was likewise supplied by the West Ham district should be supplied by one company, and that that company should be the West Ham Company; that, in consideration of the Commercial Gas Company retiring from the district, the West Ham Gas Company should pay a liberal price to the Commercial Gas Company for their mains and others property; the price agreed upon was £6924. 9s., being considerably above the outlay of capital. It was further agreed that £5000, part of this sum, should be obtained upon possession being given, and the remainder at Midsummer, 1856.

"Such an agreement has accordingly been sealed by both companies, and the Commercial Gas Company have received the £5000, and delivered to the West Ham Company possession of the district.

"It should be added, that by the terms of the agreement, an act of Parliament is to be applied for at the expense of the West Ham Company, for confirming the arrangement and prescribing the limits of the two companies.

"The directors are of opinion that the arrangement is a fair subject for congratulation to the shareholders. By it this company is relieved from an unremunerative district, with a profit upon their capital, and the surrendered locality will be supplied by the consumers from the passing of the act. This company will be secured from the interference of a body of active and energetic competitors.

"The directors have always closely watched the consumption of gas, the result of which this half year has been the discovery of several fraudulent customers; and one of them, a tradesman who had carried on business for some years, and had, by the junction of a pipe, been consuming a considerable quantity of gas for a number of years without paying for it.

"In order to make an example of so flagitious a case, the directors deemed it right to prosecute the individual criminally; and the result has been his conviction, and the infliction of the punishment of twelve months' imprisonment, with hard labour.

"The continued high price of labour and of materials renders it more than ever necessary to maintain a careful attention to the expenditure of the company; but the directors are of opinion that the profits of the company during the past half year are such as to justify a continuance of the dividend at the rate of £6 per cent.; and accordingly the directors recommended a division of the profits for the half year ending June 30, 1855, at after the rate of £6 per cent. per annum, free from income-tax, pursuant to the Company's Clauses Consolidation Act. The directors will present to the meeting a scheme for such dividend, which they have prepared, and which they recommend to the shareholders for adoption.—Dated Oct. 4, 1855.

(Signed) "C. S. BUTLER, Chairman."

THE COMMERCIAL GAS COMPANY'S GENERAL BALANCE, JUNE 30, 1855.

Dr.				*Cr.*			
To proprietors, for paid-up capital		£210,732	7 4	By purchase of freehold		£ 8,900	0 0
Amount for British debentures		45,300	0 0	Cost of gas-works and plant		155,518	17 0
" " loans		34,400	0 0	" Poplar		8,333	13 1
" due to sundry persons		9,341	2 8	" British		98,039	5 5
Contingent fund	£7,223 14 11			Amount due for supply of gas	£18,357 16 10		
Half-year's interest, to June 30	180 11 10			" " products	5,915 18 2		
		7,404	6 9			24,273	15 0
Liquidation fund		357	9 7	Stock		14,573	3 9
Profit and loss		7,435	10 6	Balance at the banker's		5,332	2 7
		£314,970	16 10			£314,970	16 10

PROFIT AND LOSS, JUNE, 30, 1855.

Dr.		*Cr.*		
To amount for dividend	£6,400 0 0	By net profit for the half year ending June 30, 1855, after defraying expenses of management, allowing for bad debts, writing off £3190. 3s. 7d. for wear and tear of plant, mains, services, meters, and paying the income-tax	£7,435	10 6
Interest on debentures	817 12 0			
Balance unappropriated	217 18 6			
	£7,435 10 6			

THE COMMERCIAL GAS COMPANY'S RECEIPT AND EXPENDITURE, FROM JAN. 1, TO JUNE 30, 1855.

RECEIPTS.			EXPENDITURE.		
Balance at the banker's	£7,948	2 3	Payment of dividends	£6,396	5 11
Cash received for instalments on shares	£ 309 19 3		Commission	370	12 10
" " supply of gas	41,178 10 6		Solicitor's charges	481	11 2
" " sale of products	11,449 9 11		Rates and taxes	1,437	7 2
" " of sundry persons	6,269 8 11		Sundry persons for offices, gasholder, station-meter, pipes, tubing, meters, &c.	10,837	11 9
	59,207	8 7	Directors' fees	£ 750 0 0	
			Auditors' fees	75 0 0	
			Salaries	1,242 14 8	
			Wages	5,480 4 9	
				7,547	19 5
			Sundry persons for coals, lime, retorts, fire-bricks, fire-clay, ironwork, castings, &c.	24,898	2 7
			Printing, stationery, &c.	281	5 10
			Repayment of loans, interest on loans, interest on debentures, &c.	7,731	10 0
			Rent of property at Ratcliff	904	15 4
			Paving, &c.	936	6 3
				£61,823	8 3
			Balance at the banker's	5,332	2 7
	£67,155	10 10		£67,155	10 10

Mr. BEWLEY having asked some questions in reference to the accounts,

Mr. JOSEPH BOX expressed his satisfaction with the improvements in the carbonising process and the economical principles on which the engineer had carried on the works.

Several proprietors having expressed themselves to the same effect,

The CHAIRMAN requested Mr. Jones, the engineer, to account for the loss sastained on coke during the last half year, as compared with the previous half year.

Mr. JONES said the falling off in the amount of profit derivable from coke was altogether owing to a reduction in price; other companies had been affected in the same manner. During the previous half year coke was 13s. 6d. per chaldron, while during the last half year the price had fallen to 11s. 3d. The difference in price would fully account for the difference between the coke account of the present and the previous half year. (Hear, hear.)

The report and statement of accounts were then unanimously adopted.

It was then resolved that a dividend of 6 per cent., free of income-tax, payable on and after the 8th inst., should be declared; after which the thanks of the meeting were unanimously accorded to the chairman and board of directors, and the proceedings terminated.

SURREY CONSUMERS' GAS COMPANY.

On Thursday, the 4th instant, a General Half-yearly Meeting of the Shareholders of this Company, was held at Burrell's Hotel, London Bridge, for the purpose of receiving the report of the directors and the declaration of a dividend for the half year ending the 30th of June last.

THOMAS POCOCK, Esq., chairman of the board of directors, on taking the chair, said the business of the day lay in a very small compass. There was very little for him to make any remark upon at present, especially as they were all furnished with a printed copy of the report, which gave every information relating to the concerns of the company. The ordinary business of the company was progressing comfortably. All that was extraordinary in the report related to two measures on bills introduced into Parliament last session, for the purpose of defining the districts assigned to each of the four companies. The bill had passed a second reading in the House of Commons; but, being at that stage opposed by some of the lighting boards and others representing themselves as gas consumers, it was considered advisable to withdraw the bill, which was done with the consent of the other three companies. The next matter of an extraordinary nature referred to the purchase of the Deptford Company, which had not been completed, owing to circumstances fully detailed in the report. It would be seen by the report that the gross income received by the company amounted to £5870. 1s. 6d., from which was to be deducted £1598. 4s. 1d. for interest and current expenses, leaving £4271. 17s. 5d. as the net profit on the last half-year's proceedings. From this sum the directors were enabled to recommend a dividend at the rate of eight per cent. per annum, free of income-tax, upon the capital of the company. After paying this dividend there would be a surplus in hand of £740. 1s. 9d. This was a simple statement of the business of the half year, and he trusted it would meet with their approbation (Cheers). He and his co-directors were endeavouring to the utmost of their ability to promote the interests of the company, and he trusted that, while the had the management of the executive department, their labours would be attended with success. (Hear, hear.)

The secretary then read the circular convening the meeting, and also the report of the board of directors, of which the following is a copy:—

"In accordance with the usual custom, the accounts for the half year ending the 30th of June last are herewith submitted, to which is annexed the auditors' reports verifying their accuracy.

"The gross income received by the company amounts to £5870. 1s. 6d., from which is to be deducted the sum of £1598. 4s. 1d. for interest and current expenses, leaving £4271. 17s. 5d. as the net profit on the last half-year's proceedings. From this sum your directors are enabled to recommend a dividend after the rate of eight per cent. per annum, free of income-tax, upon the capital of the company, to be declared; which, if adopted, will still leave a surplus in hand of £749. 1s. 9d.

"Your directors regret that they have not succeeded in obtaining the sanction of the Legislature to the bill for defining the districts assigned to each of the four companies. The bill, which had passed a second reading in the House of Commons, was at this stage opposed by some of the lighting boards, and others representing themselves as consumers of gas, who thought their interests would be affected by the operation of the bill, if allowed to pass into a law; and before going into committee a meeting of the several boards of directors was held upon the subject, at which your directors were present, when it was deemed advisable to withdraw the bill—a step which your directors, in deference to the expressed wishes of the three other companies, consented to, and the bill was accordingly abandoned.

"The next subject to which your directors deem it necessary to advert, is the negotiation with the Deptford Company for the purchase of their works. It will be remembered that the agreement with them provided that this company should purchase their undertaking, taking into account the works, privileges, and goodwill of their trade, the value thereof to be ascertained by arbitration, but not to be less than £16,500; it was also agreed that a bill should be introduced into Parliament for the purpose of legalising and carrying into effect the above arrangements, and

to authorise the winding up the affairs of that company. The bill was accordingly introduced into Parliament in the last session, and the arbitrators and umpire who had been appointed commenced their duties under the arbitration. During the progress of these proceedings, it was discovered, upon examining the papers and documents furnished by the Deptford Company, that there was a radical defect with respect to a sale to that company, by a no longer existing gas company, called the London and Greenwich Railway Gas Company—the defect consisting, not only in the absence of any evidence of the power or right of the trustees and directors of the latter company to bind their shareholders to the transfer of the works to the Deptford Company, but even the existence of absolute evidence against such power. Other discoveries were also made in respect of a right of way and the joint use of a dock belonging to the works, which, if established, would materially affect their value. In answer to these discoveries, the Deptford Company contended, that under the agreement this company had agreed to purchase the whole undertaking as it existed, and there were no terms of making out a good title, although they considered that the objections to the title were without foundation. Under these circumstances your directors were advised that any of the shareholders of the Railway Gas Company were at liberty to impeach the sale to the Deptford Company, and defeat their title, and that the transfer to this company might be questioned upon the same grounds. The necessary steps were therefore taken for the security of this company, by instituting proceedings in Chancery to annul the contract, and to restrain the Deptford Company from taking any proceedings in the arbitration, and from further prosecuting the bill in Parliament. The cause having been ultimately heard before the Lords' Justices, they decided in substance, that the purchasers were entitled to have a good title shown to the property, and referred the matter back to the arbitrators and umpire to ascertain and determine whether the title shown is defective, and to reconsider the commercial value; and that in the meantime both parties should proceed jointly with the bill in Parliament. In pursuance of this order the bill was accordingly carried through Parliament, and received the Royal assent on the 30th of July last. Your directors cannot anticipate the decision the arbitrators may arrive at, or the amount they may award to be paid for the property; but, considering the important disclosures made before the legal tribunals with regard to their affairs and the state and condition of the works, coupled with the evidence which will be tendered on behalf of this company, both of the real and commercial value of the undertaking, your directors have a right to expect a beneficial result from the inquiry. "THOMAS POCOCK, Chairman."

BALANCE-SHEET OF THE SURREY CONSUMERS' GAS COMPANY, TO JUNE 30, 1855.

To capital account, old shares		£69,877	10	0	By works		£84,157	15	11	
Amount unpaid		145	16	0	Storekeeper		1,438	10	6	
				69,731	14	0	Service laying		2,234	5	2	
New shares, 1st call	11,230	0	0				Main laying		8,961	11	4	
" " 2nd call	11,230	0	0				Wages		3,025	17	11	
	22,460	0	0				Meter fixing		1,010	5	10	
Amount unpaid	23	10	9				Surveyor's charges		174	4	6	
				22,436	9	3						£101,002 10 8
Calls paid in advance				396	4	0	Meters					7,815 2 2
Deposits and shares forfeited				380	8	8	Offices		1,428	13	10	
Creditors on debentures	21,100	0	0				Office furniture, &c.		275	16	3	
" bills payable	10,000	0	0									1,704 10 1
" sundry	3,208	10	10				Canvassing		230	13	7	
				34,308	10	10	Law expenses		7,081	14	8	
Gas rental				23,086	2	1	Direction		1,421	0	0	
Dividends unclaimed				66	3	0	Compensations		581	2	5	
Coke sold				109	19	11	Interest		1,376	0	9	
Transfer fees				4	17	6	Salaries		2,441	4	7	
							Commission		159	19	2	
							Charges		1,607	3	0	
							Insurance		27	15	0	
							Rent and taxes		1,724	18	2	
							Stationery		1,073	0	3	
												17,724 11 7
							Coals					1,071 11 8
							Dividends					10,168 14 1
							Sundry debtors					9,389 3 5
							Cash balance—general account		1,695	12	8	
							" " dividend "		44	0	5	
							" " petty cash "		4	12	6	
												1,744 5 7
		£150,520	9	3								£150,520 9 3

We have compared the above with the books and vouchers produced, and confirm the correctness thereof.

(Signed) W. BAGSHAW, N. J. POWELL, } Auditors.

The seal of the company was then affixed to the register of proprietors; the report and statement of accounts were received and adopted; and a dividend of eight per cent. per annum on the half year declared.

The CHAIRMAN: I believe that substantially our business is now done, but if any shareholder wish to ask any question relative to the report, I shall be happy to answer him as far as I am able.

Dr. LIDDELL said there was one subject to which he thought it his duty to direct the attention of the shareholders—namely, the law expenses. He found on comparing the present statement of accounts with that of last year, that there was an increase of £242 odd on the half year as compared with the previous half year. The whole law expenses from the commencement amounted to £7081. 14s. 8d.—an awful amount, and almost a dead loss to the company. If they had had any value for it, it was not to be seen on the works. No doubt the law charges were all legal, but they were so enormously large, that he thought it his duty to draw attention to the fact. Mr. James was present, and he would no doubt give some explanation why the law charges for the last half year were £242 more than for the half year previously. That sum would materially diminish the profits which the shareholders had a right to expect. He (Dr. Liddell) thought there were some further parliamentary expenses to be incurred.

Mr. JAMES: No; we are done with Parliament.

Dr. LIDDELL: And I hope we shall be soon done with law expenses.

The CHAIRMAN said that, although the amount for law charges looked large, it should be recollected that the company had had immense difficulties to contend against, and that the sum of £7000 included the total law expenditure from the commencement. Their current law expenses were diminishing from year to year, and would soon come to an end. The contract with the Deptford Company had of course occasioned some law expenses. They did not, in the transaction of business, always meet with straightforward tradesmen or straightforward lawyers. If the solicitor of the Deptford Company had told them honestly of the condition of that company's property, the directors of the Surrey Company would have acted otherwise, and less expense would have been incurred. He told them that the property was a fee simple and without incumbrance, but on inquiry they found there was a right of way to the dock, and other incumbrances. He believed that the Surrey Company had got an honest lawyer in Mr. James, and one who would not lead them astray or misguide them. Mr. James felt sorely grieved when he found such shuffling on the part of the lawyer of the Deptford Company. The directors had to go to Chancery to put a veto on the contract, but now they had got the power of putting an end to the matter by arbitration. The directors did not intend to employ Mr. James without necessity. At all events they hoped to be able to keep the dividend up to eight per cent.

Mr. JAMES said he would be sorry it should be supposed that the whole sum of £7081 came to him; it included parliamentary expenses and fees of counsel and witnesses.

Mr. BRICKHILL remarked, that some eighteen months ago the law expenses were £4000 and odd, and it was then agreed that that amount was not excessive.

Dr. LIDDEL: What amount are the auditors paid? It is not stated in the accounts.

The CHAIRNAN: I did not know that that was omitted.

The SECRETARY: It is included in the "direction."

Dr. LIDDELL: I am informed that the auditors of this large company are inadequately paid for the services they render. It takes them about five days to go through the accounts, and they only get £10.

The SECRETARY: They get £5. 5s. each for each audit.

Dr. LIDDELL said that sum was insufficient. They had the same renumeration when the company started, and now, as their labour was more than doubled, the renumeration should be increased. He would not, however, name any sum, preferring to leave the matter in the hands of those who had more knowledge of the services rendered.

The CHAIRMAN remarked, that if the matter were left in the hands of the directors, it would be considered, and brought before the shareholders at the next meeting.

A PROPRIETOR suggested that in future the report be enclosed to each shareholder along with the notice for attending the meeting; and also that the secretary be directed, in any transfer of shares, to give some acknowledgment on the certificate that the transfer was registered.

The CHAIRMAN said, he understood from the secretary that the custom of giving such acknowledgment had been adopted for some time. As to the report, it was impracticable to furnish it along with the notice of meeting; but every one who attended had a printed copy put into his hands when he entered the room. He thought the announcement of a dividend of eight per cent. would be quite satisfactory to shareholders at a distance, without any further particulars.

Mr. BARNETT said the particulars were very necessary; for sometimes it happened that a dividend of eight or ten per cent. was paid out of capital.

After some conversation, it was agreed that a copy of the report should be furnished to each shareholder with the dividend warrant.

On the motion of Mr. BRICKHILL, seconded by Mr. WHITE, a vote of thanks was unanimously accorded to the directors.

The CHAIRMAN briefly responded, and the proceedings terminated.

EXTRAORDINARY GAS EXPLOSION.—An extraordinary explosion took place at the Torriano Tavern, Kentish Town, on Thursday night about 12 o'clock. The landlord of the Torriano Tavern, which is a magnificent establishment of the modern hotel character, went round with his nephew, Mr. James Dance, who is the manager of his business, to see that all was safe. There had been no gas lighted in the public parlour during the evening. Mr. Dance was about entering this apartment with a lighted candle, when in an instant an explosion of gas took place, which shook not merely the house, but the foundations of every house in the neighbourhood for a considerable distance. The entire north front of the building was blown out. The door of the wholesale department, as well as the corner doors and windows, were blown completely across the street, and several windows in the neighbourhood were shattered to atoms by the concussion. The walls which surrounded the parlour on either side were nearly blown down, and the unfortunate Mr. Dance was carried across the bar against the mahogany compartment which divides the wholesale from the retail portion of the establishment, with such violence as to break it to pieces. The consternation in the neighbourhood was very great. Mr. Dance, who is 24 years of age, was found lying in front of the bar, in an insensible state, and dreadfully burned about the head,

face, and body. Medical aid was procured, and, it being found that no bones were broken, he was placed in bed, and properly attended to; and the report on Friday was, that he was progressing favourably. It is believed that the escape of gas originated from the upper part of the chandelier, which was upon the hydraulic principle. The house and stock, which is dreadfully injured, is insured in the Atlas and Monarch Offices.

Serious Gas Explosion.—About noon, on Saturday last, an explosion of gas, causing great alarm and considerable destruction of property, occurred at the new offices of the General Screw Steam Shipping Company in Cannon Street, City. A strong smell of gas induced one of the clerks to pass a lighted candle along the wainscoating of the suite of offices on the second floor, and a fearful explosion immediately followed, blowing out a double casement of plate glass, many pieces of which were hurled against the houses on the opposite side of the street, shattering the windows in all directions. The street was at the time blocked up with vehicles, and numbers of people were passing, but fortunately no one was injured except the clerk, who, by being thrown violently on his back, was somewhat injured. The damage in the second floor was very considerable. The partition walls were damaged, and the furniture destroyed.

Gas Stealing.—Robert Disney, shoemaker, of 35, Sekford Street, Clerkenwell, was summoned before Mr. Corrie, at the Clerkenwell Police Court, on Friday, the 5th instant, under the Chartered Gas-Light and Coke Company's original act of Parliament, clause 33, to answer the charge of having connected the company's service-pipe with his fittings, and using their gas without its passing through the meter. His supply of gas had been discontinued since the 23rd of August last, for non-payment of his account, and from that time he had been fraudulently consuming gas through this connection. Defendant admitted the offence, and the magistrate inflicted a mitigated penalty of £20, or, in default, one month's imprisonment; adding, that he must consider the company had dealt very leniently with him, for had they proceeded against him for the felony, instead of under the provisions of their act of Parliament, he should have been compelled to commit him for trial, when he would have met with much more severe punishment.

A Subterranean Labyrinth.—The little square laying between the new House of Lords and Henry the VII.'s Chapel, known as Old Palace Yard, exhibits at the present moment a curious instance of the manner in which the thoroughfares of the metropolis are intersected by the gas and water pipes of the various companies. One of the improvements which Sir Charles Barry is carrying out in this locality is the formation of a small planted enclosure, and it has been considered requisite to alter the position of all pipes running through it, and divert them into the narrow carriage-road of thirty-five feet wide appropriated to the public traffic. Ten gas and three water mains, of from twenty-four inches to four inches in diameter, are now in course of being thus diverted, at an estimated expense to the public of about £3000.

Testimonial to Mr. S. Edwards.—On Thursday evening a gathering of the workmen employed at the Liverpool gas manufactories was held in the large room of Mr. Preston's Inn, Scotland Road, in honour of Mr. Samuel Edwards, the late superintendent of the Athol Street Works, who has lately been appointed chief-engineer to the Chester New Gas Company. Mr. Daniel Lomas, his successor, occupied the chair, the vice-chair being filled by Mr. Woodall, of the Burslem and Tunstal Gas-works. After dinner, Mr. Edwards was presented with a very handsome gold watch, appropriately inscribed, and, on behalf of his lady, a neat tea and coffee service of electro-plate, subscribed for by 180 of his friends, as a memento of their respect, during his fourteen years' connection with the Liverpool gas-works, and of their regret at parting with him.

Dartford Gas Company.—At the last general meeting of this company, held on the 12th ult., the long and efficient services of Mr. Green, the manager, were brought before the shareholders. Mr. Green having been connected with the company for a period of twenty-eight years, and discharged the duties of his office with zeal and fidelity, it was deemed an appropriate and fitting occasion to acknowledge his services; and a resolution was entered on the minutes of the company to the effect, that a money gift of £50 be given to Mr. Green for his past services, and the readiness and ability which he had always shown in the interests of his employers. Mr. Green returned thanks in suitable terms, and the result of the day's proceedings was mutually pleasant to all parties.

Advertisements.

By Royal Letters Patent.

BASFORD'S
PATENT PURIFIED COAL GAS.

TO GAS COMPANIES
AND PROPRIETORS OF GAS WORKS.

Terms of Licence, &c., may be obtained of the Patentee, or Messrs. Mill and Strutton, Penclawdd Works, near Swansea, Glamorganshire; or 17, Ampton Place, Gray's Inn Road, London.

GAS TRADE.

WANTED, a person of good address, who is practically acquainted with the Gas Trade, competent to give Estimates, and manage a small Workshop. A person with first-rate testimonials for ability and energy may obtain a permanent and very desirable situation in a London house, of very old standing. Address, stating last engagement and qualifications, to B. S., Post-office, 180, Strand.

H. JONES, Gas Meter Manufacturer, No. 41, OLD-STREET, St. Luke's, London, begs respectfully to call the attention of Gas Companies to his latest improvements in the WET METER, by means of which water cannot be abstracted, neither can Gas by any possibility pass through the Meter without registering.

TO GAS COMPANIES, FITTERS, AND IRONMONGERS.

LLOYD and SUMMERFIELD, Manufacturers of CUT and FLINT GLASS Jet Moons, Globes, Hemispheres, and Chimneys of every description; Hall Lamps, Lustres, and Chandeliers of the most modern patterns.

Park Glass Works, Birmingham.

WALTER MABON,
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Ardwick Iron Works, Fairfield-street,
MANCHESTER,
Manufacturer of

IRON TANKS for Gasholders, Railway Stations, &c.

GASHOLDERS.—Extensive premises at Gorton, solely for the manufacture of Gasholders, and other heavy Wrought Iron Structures.

GAS APPARATUS.—W. M. has an extensive assortment of patterns for Purifiers from 4 feet to 15 feet square, also round ones from 4 feet to 10 feet diameter; Scrubbers, Condensers, Washers, Columns, Girders, and Tripod Patterns, suitable for Gasholders, from 10 feet to 150 feet diameter, either Singlelift or Telescope. Contractor for Gas Works of any magnitude. Designs, Specifications, and Estimates furnished.

WROUGHT and CAST IRON ROOFS for Railway Stations, Gas Works, Warehouses, and Sheds, prepared for Slates or for Corrugated Iron.

IRON HOUSES, either for Dwellings, Manufactories, or Public Buildings.

PIPES and VALVES, for Gas and Water, from 2 inches to 48 inches bore.

NO CHIMNEY WANTED
FOR
RICKETS'
PATENT CALORIFERE GAS STOVES.

In Churches, Halls, or Shops, and for Conservatories or any close apartment, a pipe can be attached to convey away the burnt air.

RICKETS' CHEAP GAS STOVE,
Price £1. 15s.,

Made of sheet-iron, suitable for heating small Counting-houses, Bed-rooms, Cellers, &c.

Trade Discount 25 per cent. for cash.

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THOMAS EDINGTON,
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JAMES FEATHERSTONE,
ENGINEER,
Manufacturer of GASHOLDERS, IRON ROOFS, and every description of Gas Apparatus.
Alliance Iron Works,
CLAYTON, near MANCHESTER.

JOHN BENT,
MANUFACTURER OF GAS METERS,
283, Bell Band Road,
BIRMINGHAM,
(Established 1830),

Begs respectfully to call the attention of Gas Companies, Engineers, &c., to his WET GAS METER, made upon the most improved principles, the most admirable materials, and warranted to register correctly.

JOSEPH LAMB and CO.,
WALLBOTTLE COLLIERY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturers of FIRE CLAY RETORTS of all dimensions; FIRE BRICKS; and every other article in Fire Clay.
Also owners of HOLYWELL MAIN GAS COAL.

HANSON AND CHADWICK'S PATENT HIGH-PRESSURE WATER METERS.

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are now prepared to execute orders for the above. Descriptive Circulars and Lists of Prices forwarded on application.

Angle-street Works,
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ASKEW'S Patent Gas Bath—the simplest, cheapest, and most economical Bath out, by which a bath can be obtained in 10 minutes to half an hour: also Copper and Iron Boilers, for heating baths by fire. Can be seen in operation at 27½, Charles Street, Hampstead Road.

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JOSEPH BOULTON,
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No. 28, Bagnigge-wells-road, Clerkenwell,
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Experimental and Station Meters of any size made to order on the shortest notice.—Governors, Pressure Registers, Gas-cooking Stoves, and every description of Gas Apparatus.

EIGHTON MOOR GAS COALS.—Parties wishing to be supplied with these first-class Gas Coals will please to apply to Mr. Matthew Nesbit, Eighton Moor Office, Newcastle-upon-Tyne. These coals are well known as among the richest in gas, and working the roundest on the River Tyne. They are extensively used by metropolitan gas works.

ANDERSON'S
DOUBLE-ACTING PISTON EXHAUSTER

is the most simple and effective machine of the kind made. It gives no appreciable oscillation or slip; works with extremely little friction; and requires no internal lubrication.

These Exhausters are in operation both in London and the Provinces, pumping from 10,000 to 70,000 cubic feet of gas per hour. They occupy very little space, and may be set either perpendicular or horizontal.

Particulars of price, &c., may be had on application to Mr. Anderson, at the Gas Works, Rotherhithe London.

M. KELLY, Cast Iron Wharf, 31, Bankside, London.—Retorts of superior quality, Socket and Flange Pipes, Bends, Branches, Syphons, and every description of Castings for Gas and Water Works, Gasometers, Tanks, Purifiers, Condensers, &c., erected complete, or the materials supplied.

Gas Valves and Sluice Cocks on an improved principle. Patent Gas Tubing and Connections.

A stock of the above articles kept.

The Pipes and Retorts supplied by M. K. are cast vertically, which ensures soundness and equality of thickness throughout.

PATENT SANITARY GAS SHADES.

These Shades, manufactured exclusively by RICE HARRIS, and SON, on an entirely new principle, effectually destroy the effluvia and smoke, and diminish the heat, which have hitherto made the use of gas so objectionable in dwelling-houses and offices, where cleanliness, freedom from smell, and a cool atmosphere, are of importance. They are simple and inexpensive, and may be had at the Works, in a variety of forms adapted to the style of fittings or the taste of the purchaser.

Islington Glass and Alkali Works,
BIRMINGHAM;
and 1, Three King-court, Lombard-street,
LONDON.

May 27, 1854.

Share List.

(Directors and Managers of Gas Works are earnestly requested to enable us to rectify the errors and fill up any omissions in the following List.)

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£	**ENGLAND.**	£ s. d	£ s. d	£ s. d
		Aberdare			
		Abergele			
		Aberystwith			
		Abingdon			
1050	10	*Accrington*	10 0 0	7 0 0	15 10 0
		Albrighton			
		Alcester			
		Alford			
		Alfreton			
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	5 0 0	10 0 0
800	5	Altrincham	5 0 0	6 0 0	6 0 0
		Amersham			
170	10	Ampthill	10 0 0	5 0 0	10 0 0
350	10	Andover	10 0 0	5 0 0	11 0 0
330	5	Appleby	5 0 0	3 0 0	2¼ to 2½
		Arundel			
		Ashbourn, Derby			
292	5	Ashburton	5 0 0	5 0 0	
		Ashby-de-la-Zouch			
		Ashford, Kent			
1600	30	*Ashton-under-Lyne*	30 0 0	10 0 0	60 0 0
		Atherstone			
		Axminster			
200	20	Aylesbury	20 0 0	5 0 0	21 0 0
		Aylsham, Norfolk			
		Bacup, Lancashire			
		Bakewell			
200	10	Baldock	10 0 0	5 0 0	10 0 0
1000	10	Banbury	10 0 0	5 0 0	10 10 0
		Bangor			
500	5	Barking, Essex	5 0 0	5 0 0	5 5 0
260	10	Barnard Castle	10 0 0	5 10 0	10 15 0
		Barnsley £6000		7 10 0	
100	20	Barnstaple	20 0 0	5 0 0	23 0 0
1158	2	Barton-on-Humber	2 0 0	5 0 0	2 0 0
120	25	Basingstoke	25 0 0	7 0 0	35 0 0
2500	20	*Bath*	16 0 0	10 0 0	30 to 32
		Battle £2000		6 0 0	
56	26½	Bawtry	26 10 0	5 0 0	25 0 0
		Beccles (& Water)			
300	30	Bedford	25 0 0	4 0 0	20 0 0
200	10	Bedworth	10 0 0	5 0 0	11 0 0
		Belford			
		Bedale, Yorkshire			
		Belper			
		Beminster			
420	5	Berkhempstead	5 0 0	6 0 0	6 0 0
700	10	Berwick-on-Tweed	10 0 0	6 0 0	12 0 0
		Bewdley			
280	10	Bideford	10 0 0	6 0 0	10 10 0
		Biggleswade			
170	10	Bicester	10 0 0	6 0 0	11 5 0
		Bilston £15,100	5 0 0	7 0 0	6 10 0
		Billericay			
		Bingham			
		Bingley £7400		4 0 0	
		Birkenhead £70,000	35 0 0	3 0 0	35 to 37
2400	50	*Birm. & Staffordsh.*	50 0 0	10 0 0	95 to 96
2400	25	*Ditto*, new shares	10 0 0	10 0 0	15 to 16
928	75	*Birmingham*	75 0 0	10 0 0	156 to 158
		do. 1-10 shares			15 to 16
		Bishop's Auckland			
140	25	Bishop's Stortford	25 0 0	5 0 0	24 0 0
3000	15	*Blackburn*	15 0 0	10 0 0	25 0 0
		Blandford			
		Blyth			
		Bodmin			
		Bognor			
3909	16⅔	*Bolton*	16 10 0	9 19 8	35 0 0
7466	16	,, new	1 0 0		
		Boroughbridge			
160	50	*Boston*	50 0 0	10 0 0	75 0 0
200	10	Bourn	10 0 0	5 0 0	10 0 0
160	10	Brackley	10 0 0		
		Bradford, Wilts			
	25	*Bradford, Yorksh.* £45,000	25 0 0	10 0 0	49 0 0
		Bramptn, Cumblnd			
		Brandon, Suffolk			
		Brecon			
		Bridge-end, Glam.			
6000	5	*Brierly Hill*	5 0 0	4 0 0	5 2 6
		Brighouse			
2250	20	*Brighton*	20 0 0	5 0 0	15 to 16
1125	20	,, new shares	16 0 0	5 0 0	10 to 12
2471	20	*Brighton and Hove*	20 0 0	3 10 0	
107	8	,, new shares			
179800	Stk.	*Bristol United*	Stock	8 0 0	170 to 175
154	8	Brixham	8 0 0	5 0 0	5 to 6
		Braintree			
750	50	*Brentford*	50 0 0	5 10 0	48 to 50
800	25	,, new shares	11 0 0	5 10 0	11 0 0
		Brentwood			
200	30	*Bridgwater*	30 0 0	5 0 0	30 0 0
400	10	Bridlington	10 0 0	5 0 0	10 0 0
		Bridport			
		Brigg			
		Broadstairs			
		Bromsgrove			
		Bromley (Kent)			
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8 0 0
		Brynmawr			
100	25	Buckingham	25 0 0	6 0 0	28 0 0
600	12	*Burnley*	12 0 0	10 0 0	
		Burslem & Tunstall			
		Burton-on-Trent			
		Bury, Lanc. £6570			
		Bury St. Edmund's		5 0 0	
200	10	Buxton	10 0 0		
		Callington			
		Calne, Wilts			
		Camborne			
	50	*Cambridge* £34,560	50 0 0	7 0 0	76 0 0
240	50	*Canterbury*	50 0 0	6 0 0	61 to 63
	240	*Canterbury*, 2d iss.	25 0 0	6 0 0	30 to 31
	800	*Cardiff*	25 0 0	7 10 0	34 0 0
		Carmarthen			
		Carshalton			
		Castle Cary			
	249	Castleford	5 0 0	5 0 0	5 0 0
	300	Castletown (Man)	2 0 0		
		Chapel on the Frith			
		Chard			
		Chatteris			
255	10	Cheadle	10 0 0	5 0 0	10 0 0
100	25	Chelmsford	25 0 0	5 0 0	40 0 0
100	25	,,	15 0 0	5 0 0	15 0 0
		Cheltenham £18,732		9 0 0	
		Chepstow			
230	10	Chesham, Bucks	10 0 0	5 0 0	10 0 0
		Chester			
250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0
		Chesterfield £13,125		4 17 6	
240	25	Chichester	25 0 0	6 0 0	30 0 0
		Chippenham			
		Chipping Norton			
100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0
		Chorley			
		Chowbent (Lanc.)			
		Christchurch			
		Cirencester			
		Clare (Suffolk)			
		Cleckheaton, York.			
		Clitheroe			
750	4	Cockermouth	4 0 0	7 0 0	5 0 0
		Colchester			
		Collumpton			
		Colne, Lancashire			
		Coleford, Gloucest.			
300	5	Coggeshall	5 0 0	3 0 0	3 0 0
200	25	*Congleton*	25 0 0	5 0 0	31 0 0
		Conway			
		Cowbridge			
		Corsham			
800	25	*Coventry*	25 0 0	6 0 0	30 0 0
		Cowes			
300	5	Crowland			
		Crowle (Lincoln)			
		Croydon £20,000		5 0 0	
		Cranbrook £1900		5 0 0	
		Crayford & Bexley			
420	5	Crediton	5 0 0	5 0 0	6 0 0
		Crewe, Cheshire			
		Dalton			
		Darlaston			
		Darlington & Water			
250	20	Dartford	20 0 0	7 10 0	27 0 0
125	20	Daventry	20 0 0	6 0 0	24 8 0
		Dawley, Salop			
346	5	Dawlish	5 0 0	8 0 0	7 10 0
		Deal			
1200	1	Deddington	1 0 0		
		Delph (Yorkshire)			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
820	10	*Deptford*	10 0 0		1 to 2
	25	*Derby*	25 0 0	10 0 0	50 0 0
90	20	Dereham (East)	20 0 0	5 0 0	21 0 0
4000	5	*Dewsbury*	5 0 0	7 0 0	8 12 6
		Devizes			
7000	5	*Devonport*	5 0 0	6 0 0	7 10 0
		Dolgelly			
280	25	Dorchester	25 0 0	5 0 0	30 0 0
120	25	Dorking	24 0 0	5 0 0	25 0 0
192	25	Douglas, Isle of	25 0 0	8 0 0	30 0 0
209	56¼	*Dover* [Man	56 10 0	5 15 0	71 to 72
25	60	Downham	60 0 0	7 10 0	
		Driffield			
		Droitwich			
600	20	*Dudley*	20 0 0	5 0 0	28 to 30
		Droylsden			
		Dukinfield			
		Dunmow			
250	10	Dunstable	10 0 0	5 0 0	8 0 0
		Durham			
276	9	Dursley, Gloster	9 0 0	5 10 0	8 0 0
300	10	Eastbourne			
		East Grinstead			
		Egremont, Cumbld			
703	6¼	Elland	6 10 0	8 0 0	10 0 0
		Ellesmere			
200	10	Emsworth			
400	5	Enfield	5 0 0	5 0 0	5 0 0
300	19	Epsom and Ewell	19 0 0		
		Eton (Cannel Gas)			
		Evesham			
1600	25	*Exeter*	25 0 0	8 0 0	40 to 42
		Exmouth			
		Eye, Suffolk			
150	10	Fairford	10 0 0		
64	25	Fakenham	25 0 0	5 0 0	25 0 0
		Falmouth			
100	30	Fareham	30 0 0	2 10 0	30 0 0
120	25	Farnham	25 0 0	10 0 0	42 0 0
		Farringdon			
		Faversham			
		Ferry Hill (Durhm.)			
	5	Filey	5 0 0	5 0 0	5 0 0
		Fleetwood			
300	10	Folkestone	10 0 0	10 0 0	15 0 0
240	10	,, new shares	8 0 0	10 0 0	13 0 0
		Fowey			
		Fordingbridge			
240	5	Framlingham	5 0 0	5 0 0	5 10 0
		Frome			
		Gillingham, Dorset			
		Glastonbury			
		Glossop £10,000		9 0 0	
1000	25	*Gloucester*	25 0 0	7 10 0	28 0 0
516	5	Gomersal	5 0 0		
		Godalming [down			
350	10	Gorleston & South-			
	135	Gosport	2 10 0		2 10 0
	450	Grantham	20 0 0	7 0 0	28 0 0
	1000	Gravesend	20 0 0	5 0 0	21 0 0
		Grays Thurrock			
	1000	*Great Grimsby*	9 10 0	8 0 0	13 to 14
		Great Torrington			
	25	Guildford	25 0 0	4 0 0	20 0 0
		Guisborough			
		Hadleigh			
		Hailsham			
		Hales Owen			
	360	Halesworth	5 0 0	7 10 0	5 10 0
	600	*Halifax*	25 0 0	10 0 0	48 0 0
		Halstead			
		Hampton Court			
	1000	*Harrogate*	6 5 0	5 0 0	6 5 0
		Hartlepool £15,137	5 0 0	7 10 0	7 12 6
		Harwich			
	540	Haslingden, Lansh	6 0 0	7 10 0	6 0 0
	330	*Hastings and St. L.*	50 0 0	6 0 0	60 0 0
	500	Havant			
		Haverhill			
		Haworth, Yorks			
		Hayle			
	4965	Hebden Bridge	12 6		15 0
		Helstone			
	250	Hemel Hempstead	10 0 0	4 0 0	6 10 0
	300	Henley-on-Thams	10 0 0		
		Hereford £5300		4 0 0	
	300	Herne Bay	10 0 0	6 0 0	11 0 0
	270	Hexham	10 0 0	7 0 0	12 0 0
	400	*Heywood*		7 10 0	
		Higham Ferrers			
	520	High Wycombe	5 0 0	6 0 0	6 16 0
		Highworth (Wilts)			
	280	Hinckley	10 0 0	5 0 0	9 0 0
		Hindley, Lancash.			
	200	Hitchen	20 0 0	5 0 0	20 0 0
	100	Hythe & Sandgate	10 0 0	6 0 0	11 0 0
		Hoddesden			
		Holbeach			
		Holmfirth £8880		3 10 0	
		Holyhead			
		Holywell (see Brit.			
	95	Honiton [Prov.	25 0 0	4 0 0	17 0 0
		Horbury			
	6	Horncastle	500		
	1200	Horsforth	2 10 0		2 10 0
	128	Horsham	20 0 0	5 0 0	
		Houghton-le-Sprg.	10 0 0	8 0 0	
		Howden			
		Hull, Sculcoats (see B. Prov.)		5 0 0	
		Hull, £11,712. 10s.			
	210	Hungerford	10 0 0	5 0 0	10 0 0
		Huddersfield			
		Hyde (Cheshire)			
		Idle and Eccleshill			
	400	Ilkeston	6 5 0	3 10 0	6 5 0
		Ilminster			
		Ilford			
		Ilfracombe			
		Ironbridge			
	2800	*Ipswich*	10 0 0	7 0 0	14 0 0
	800	*Isle of Thanet*	20 0 0	5 0 0	20 to 21
		Kendal £9100		8 15 0	
	300	Kenilworth	7 10 0		7 10 0
	400	Keswick	5 0 0	4 5 0	4 4 0
	100	Kettering	25 0 0	5 0 0	25 0 0
		Kiddermins. £10000		5 0 0	
		Kimbolton			
		Kingsbridge			
		King's Langley			
		Kingston-on-Thms			
		Kington, Hereford			
		Kirkby Lonsdale			
		Kirkham, Lanc.			
		Knighton			
		Knutsford			
		Lancaster			
		Llanelly £3000		5 0 0	
		Llandovery			
		Leamington Priors		6 0 0	
	160	Leatherhead	10 0 0		
		Ledbury			
		Leeds Old Comp.			
	25	old stk., £60,300	25 0 0	10 0 0	46 to 47
	25	new ,, £23,775	25 0 0	6 0 0	29 to 30
	20	*Leeds New* £60,000	20 0 0	10 0 0	36 to 38
	3623	*Leicester*	10 0 0	7 0 0	15⅞ to 16¼
		Leigh (Lancashire)			
	135	Leighton Buzzard	20 0 0	7 0 0	21 0 0
	400	Leominster	9 0 0	5 0 0	8 0 0
		Leyburn, Yorksh.			
	240	Liskeard	5 0 0	8 0 0	6 0 0
	330	Lewes	25 0 0	5 0 0	25 0 0
	320	*Lincoln*	25 0 0	10 0 0	48 0 0
		Leyland, Lancash.			
	240	Littlehampton	5 0 0	7 10 0	5 0 0
	250	Lichfield	20 0 0	10 0 0	35 0 0
		Liverpool United	100 0 0	10 0 0	182 to 186
		,, ½ sh.	25 0 0	10 0 0	47½ to 47¾
	50	Langport	25 0 0	4 0 0	15 0 0
		London Comps.—			
	10	Anglo-Romano	10 0 0	4 0 0	
	5000	British Provincial	20 0 0	7 0 0	21 to 23
	5000	,, Prov., new	16 0 0	7 0 0	17 to 18
	4000	*Commercial*	25 0 0	6 0 0	25 to 27
	2000	,, new shares	2 10 0	6 0 0	partolpm
	12,000	*Chartered*	50 0 0	4 10 0	51 to 53
	6000	,, new shares	10 0 0	4 10 0	9 to 10
	2000	*City of London*	150 0 0	3 0 0	96 to 100
	4000	*Equitable*	50 0 0	4 0 0	35 to 37
		,, deb. £47,600			
	12,000	European— (Amiens, Boulon., Caen, Havre, Nantes, & Rouen)	20 0 0	5 &bonus	14 to 15

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£		£ s. d	£ s. d	£ s. d
15,000	10	*Gt.Cntl.Consumers* deb. £66,000	10 0 0	8 0 0	11 to 11½
8000	50	*Impl. Continental* —First capital (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam).....	42 0 0	6 11 0	40 to 45
7000	50	Second capital— (Aix la Chapelle, Antwerp, Bordeaux, Brussels, Cologne, Frankfort-on-Maine, Haarlem, Marseilles, Toulouse Vienna)	41 0 0	10 7 0	70 to 72
	50	Third capital ...	43 10 0	9 4 0	67 to 69
13,000	50	*Imperial*	50 0 0	10 0 0	86 to 88
13,000	50	„ (new).....	7 10 0	10 0 0	25 to 26
		„ Bonds 130,000l	10 0 0	10 0 0	22 to 22½
4000	40	*Independent*	40 0 0	6 0 0	48 to 50
5000	50	*London*	50 0 0		5 0 0
1000	50	„ (red)	50 0 0		
2000	50	„ (blue).....	50 0 0	3 6 0	15 to 18
6000	25	„ (preference)	25 0 0	6 0 0	25 to 26
50,000	1	Oriental (Calcutta)	1 0 0		1½ to 1⅝
9000	50	*Phœnix*	49 0 0	4 0 0	30 to 32
1000	100	*Ratcliff*	90 0 0	5 0 0	70 to 72
4000	25	*South Metrop.*	25 0 0	6 0 0	23 to 25
7000	10	*Surrey Consumers'*	10 0 0	8 0 0	11 0 0
9000	50	United Genl. (Cork, Dublin, Limerick)	50 0 0	2 0 0	19½ to 20
6410	20	Western A shares	20 0 0	3 10 0	13 to 14
3500	20	„ B „	12 0 0	3 10 0	5 0 0
		Littleborough			
		Lostwithiel			
		Loughborough.....			
240	25	*Louth*.....	25 0 0	6 0 0	26 10 0
2500	10	*Lowestoft (& Water)*			
		Llangollen			
611	5	Ludlow Union.....	5 0 0	5 0 0	5 0 0
		Luton.....			
		Lutterworth.....			
63	20	Lyme Regis	20 0 0	4 0 0	20 0 0
120	25	Lymington	25 0 0	5 0 0	25 0 0
200	10	Malmesbury.....	10 0 0	2 10 0	5 15 0
		Macclesfield 32,000l			
		Maidenhead.....			
300	50	*Maidstone*.....	50 0 0	10 0 0	90 0 0
160	40	Maldon	23 0 0	5 10 0	24 0 0
		Marlborough			
		Malton (New).....			
		Manningtree			
		Mansfield £5000		10 0 0	
150	10	Mansfield Wood-March .....[house	10 0 0		
		Margate(see l. of T.			
		Market Deeping ...			
		Market Drayton ...			
132	25	Market Harboro'	25 0 0	6 0 0	34 0 0
		Market Raisin.....			
		Market Weighton			
210	10	Marlow	10 0 0	5 0 0	10 0 0
370	10	Maryport	10 0 0	6 0 0	12 0 0
500	5	Matlock Baths.....	5 0 0		
		Melksham.....			
		Melton Mowbray .			
		Merthyr Tydvil ...			
50	10	Mere	10 0 0		
		Middleton £9039		5 0 0	
		Midsummer Norton			
		Middlesboro'			
198	5	Mildenhall	5 0 0	5 0 0	5 0 0
700	10	Mitcham	10 0 0	10 0 0	14 10 0
650	5	Mold (and Water)	5 0 0	6 0 0	6 10 0
700	10	Monmouth	10 0 0	5 0 0	
		Monk Wearmouth			
150	10	Moreton in Marsh	10 0 0	3 10 0	
		Morley (nr. Leeds)			
		Mossley.....			
		Mottram			
220	16	Morpeth	16 0 0	5 0 0	17 10 0
		Nantwich			
		Neath.....			
183	10	Needham Market..	10 0 0	4 0 0	
		Newark..... £5000		10 0 0	
250	20	Newbury...[Union	20 0 0	5 0 0	20 0 0
13,000	5	Newcastle&Gatshd	5 0 0	8 0 0	7 12 6
		Do. un. Lyne £6200		4 0 0	
600	5	Newmarket	5 0 0	6 0 0	5 0 0
250	5	Newent	5 0 0		
		Newhaven (Sussex)			
		New Mills £2115		8 0 0	
		Newport, M. £11720			
320	50	*Newport, Isle of W.*	38 0 0		5 0 0
		Newport Pagnell			
		Newport, Salop ...			
		New Romney			
		Newton Abbot.....			
		Newton, Lanc.....			
		Newtown (Mntgom.			
		Northallerton			
120	10½	North Walsham ...	10 10 0	5 0 0	10 10 0
542	20	*Northampton*	18 0 0	10 0 0	31 0 0
		Northwich [40000l]			
		Norwich (see B. P.		7 0 0	
900	50	*Nottingham*	50 0 0	10 0 0	
900	50	New shares		10 0 0	
		Nuneaton			
		OakenGates(Salop)			
170	10	Oakham.....	10 0 0	4 10 0	8 10 0
		Oakhampton			
200	10	Odiham, Hants.....	10 0 0	4 0 0	10 0 0
		Olney			
658	10	*Ormskirk*	7 10 0	5 0 0	
		Ossett.....			
		Otley, Yorkshire...			
80	25	Oundle	25 0 0	7 0 0	25 0 0
120	150	*Oxford*	150 0 0	6 10 0	230 0 0
		Over Darwen £8000		5 0 0	
		Padiham			
		Padstow			
		Pately Bridge, Yrk.			
		Peeltown (Man) ...			
		Pembroke			
250	20	Penrith	15 0 0	6 10 0	21 0 0
		Penryn			
		Penzance			
200	10	Petworth	10 0 0	9 10 0	14 15 0
320	5	Petersfield	5 0 0	4 0 0	5 0 0
		Pickering			
3000	10	*Plymouth*	10 0 0	8 0 0	18 0 0
		Pocklington			
		Pontefract.....			
		Pontypridd		4 0 0	
400	10	Poole	10 0 0	5 0 0	10 0 0
		Port Madoc.....			
600	50	*Portsea Island* ...	53 0 0	5 0 0	50 to 51
		Potton (Beds)			
400	10	Prescott.....	9 0 0	4 13 4	7 0 0
3000	20	*Preston*	20 0 0	10 0 0	44 0 0
		Pudsey ...£12,000		5 0 0	
		Pwllheli.....			
		Quordon & Monksrl			
		Radcliff and Pilkington £9000		4 12 10	
		Ramsay, I. of Man			
		Ramsgate (see l. of T			
1000	10	*Reading*	10 0 0	4 0 0	7¼ to 8
500	20	*Reading Union* ...	20 0 0	4 0 0	16 0 0
		Redditch			
		Redruth.....			
		Reigate			
		Retford (East).....			
		Rhyl			
		Richmond (Surrey)			
400	5	Rickmansworth ...	5 0 0		5 0 0
180	10	Ringwood	10 0 0		10 0 0
		Ripon.....			
		Roches. & Chatham		6 0 0	
		Rochford [£20,000			
		Rockingham.....			
		Romford			
		Ross			
245	25	*Rotherham*	25 0 0	6 0 0	38 to 39
	12½	do. Half Shares	12 10 0	6 0 0	19 to 19½
		Royston.....			
		Rugby			
500	10	Rugeley.....	8 10 0	5 0 0	10 10 0
		Runcorn... £11,000		7 10 0	
		Ruthin			
500	10	Ryde	10 0 0	6 0 0	12 0 0
		Romsey			
		Saddleworth.....			
225	20	Saffron Walden ...	20 0 0	3 15 0	19 0 0
		St. Alban's			
		St. Austel			
		St. Asaph			
		St. Colomb			
		St. Helen's £7500		7 10 0	
		St. Helier's (Jersey)			
		St. Ives, Hunting.			
		St. Ives, Cornwall			
250	10	St. Neot's	10 0 0	8 0 0	12 0 0
		St. Peter's Pt., Guer			
	25	Salisbury.....[nsey	25 0 0	6 0 0	28 to 30
317	10	Sandbach	10 0 0	5 0 0	12 0 0
140	10	Saxmundham	10 0 0	5 0 0	10 0 0
		Scarborough.....	10 0 0		13 0 0
201	5	Sedburgh	5 0 0	2 10 0	4 15 0
300	16	Selby	16 0 0	5 0 0	16 0 0
		Settle			
290	10	Sevenoaks.....	10 0 0	4 0 0	10 0 0
250	10	Shaftesbury	10 0 0	3 0 0	9 0 0
5400	25	*Sheffield United* ...	24 0 0	7 10 0	29 to 30
		Shelton, Pott. (s.B.P			
		Shepton Mallet ...			
600	5	Sherborne.....	5 6 0	5 0 0	5 0 0
2914	5	Shields (Tynemth.	5 0 0	5 0 0	5 17 6
		Shields (South) ...			
		Shiffnal, Salop			
1000	5	*Shipley*	5 0 0	6 0 0	7 10 0
150	10	Shipston-on-Stour	10 0 0	5 0 0	10 0 0
		shoreham			
		Shrewsbury £10,000		7 0 0	
400	10	Skipton	10 0 0	4 0 0	11 0 0
		sleaford.....			
250	10	Slough	10 0 0		
		Snaith			
		Soham			
400	5	Southam	5 0 0		
		Southend, Essex...			
300	5	Southwold [Bdge)	5 0 0	5 0 0	5 0 0
2000	5	South Essex (Lea			
		South Molton			
1000	50	*Southampton*	33 0 0	5 0 0	
220	10	Southwell	10 0 0	4 0 0	
		Sowerby, Yorksh.			
		Spennymoor (Dur.)			
		Spittal (Berwick-			
400	5	Spilsby [on Tweed)	5 0 0		
		Staindrop			
		Stretford			
		Stokesly.....			
		Stafford £10,000		5 0 0	
		Staines and Egham			
		Staley Bdg. £15,000		10 0 0	
225	50	*Stamford*	50 0 0	4 0 0	48 0 0
		Stevenage			
840	9½	*Stockton-on-Tees*	9 10 0	9 0 0	11 to 12
1000	10	Stoke-upon-Trent	10 0 0	7 0 0	12 15 0
500	10	„ new shares	8 0 0	7 0 0	10 10 0
		Stone, Stafford.....			
		Stoney Stratford ...			
		Stourbridge			
		Stowmarket.....			
150	20	Stratford-on-Avon	20 0 0	7 10 0	30 0 0
		Stroud			
169	10	Swaffham.....	10 0 0	5 0 0	5 10 0
		Swansea £9000			
		Sudbury.....			
		Sunderland, old....			
6400	5	*Sunderland*, new ..	5 0 0	6 0 0	6 12 6
200	10	Sutton Coldfield ...	10 0 0		
		Sutton (Surrey).....			
250	10	Sutton-in-Ashfield	10 0 0	5 0 0	10 0 0
		Sutton Southcoates & Drypool (Hull).	20 0 0		23 to 24
		Swindon.....			
1000	10	Sydenham.....	10 0 0		
2800	5	*Taunton*.....	5 0 0	6 0 0	6 0 0
		Tadcaster			
		Tamworth.....			
		Tavistock.....			
200	5	Tenbury.....	5 0 0	5 0 0	5 0 0
		Tenby.....			
150	10	Tenterden.....	10 0 0	4 0 0	8 0 0
		Tetbury, Gloster..			
		Tewkesbury			
200	10	Thame	10 0 0	5 0 0	10 0 0
230	10	Thetford	10 0 0	6 0 0	10 10 0
		Thirsk			
		Thornbury.....			
		Thorne.....			
111	10	Tiverton	10 0 0	10 0 0	17 to 18
1141	5	Todmorden	5 0 0	5 0 0	6 0 0
600	2½	Topsham	2 10 0		3 0 0
		Torquay.....			
		Torrington, Devon			
		Totnes			
		Totnes Consumers			
4000	5	Tottenham	3 15 0	8 0 0	4 0 0
		Towcester.....			
		Town-Malling.....			
225	10	Tring	10 0 0	5 0 0	10 0 0
		Trowbridge (see			
75	50	Truro ...[Brit. P.)	50 0 0	5 0 0	
		Tunbridge.....			
		Tunbridge Wells...			
		Tuxford			
		Tyldesley, Lanca-			
		Ulverston ... [shire			
		Uppingham			
240	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
		Usk.....			
		Uttoxeter.....			
		Uxbridge			
		„ & Hillingdon			
		Ventnor .. [Cons.			
1000	25	*Wakefield*, old capl.	25 0 0	8 0 0	35 0 0
1600	5	„ new „	5 0 0	8 0 0	7 0 0
		Wallasey.....			
300	10	Wallingford	10 0 0	5 0 0	8 0 0
994	10	Wandsworth.....	10 0 0	5 0 0	11 0 0
200	10	Wantage.....	9 0 0	5 0 0	10 10 0
	20	*Warrington* £23304	20 0 0	10 0 0	28 to 29
100	10	Wareham	10 0 0	3 10 0	8 0 0
		Warkworth			
120	25	Warminster	35 0 0	5 0 0	27 0 0
		Warth			
		Warwick £15,000		6 0 0	
		Watford.....			
111	25	Welchpool, Mntgy.	25 0 0	5 0 0	25 0 0
		Wellingborough ...			
100	24	Wellington, Salop	24 0 0	7 10 0	24 0 0
		Wellington, Somers			
160	25	*Wells, Smrst.* £5000	25 0 0	10 0 0	32 to 34
		Westbury.....			
		Weston-sup.-Mare			
2600	5	West Ham	5 0 0	5 0 0	5 0 0
		Wetherby			
		Whitby			
		Whitehaven			
		Whitstable			
250	10	Whittlesea.....	10 0 0	5 0 0	11 0 0
1216	10	*Wigan*	10 0 0	10 0 0	22 0 0
		Wigton (Cumberl.)			
		Willenhall.....			
		Wilton			
141	10	Winslow	10 0 0	5 0 0	10 0 0
240	10	Wimborne Minster	10 0 0		
600	10	Wimbledon	8 0 0		8 0 0
		Wincanton.....			
380	50	Winchester	50 0 0	5 0 0	50 0 0
900	12½	Windsor.....	12 10 0	10 0 0	23 0 0
		Witham.....			
		Witney.....			
4480	10	*Wolverhampton* ...	10 0 0	9 0 0	19 to 19½
4480	10	do. new shares	1 5 0	9 0 0	4 5 0
		do. deb. £10,000			
200	10	Woburn.....	10 0 0	5 0 0	10 0 0
210	10	Wokingham	10 0 0	4 0 0	10 0 0
12	500	Woodbridge	500 0 0	5 0 0	
600	2½	Woodstock	2 10 0		2 15 0
		Wooler			
		Wotton-un.-Edge			
2900	10	*Worcester*	10 0 0	8 0 0	14 5 0
		Workington			
		Worksop & Radford			
200	10	Wirksworth	10 0 0	5 0 0	10 0 0
		Worthing.....			
		Wrexham			
1800	10	Woolwich Equitbl.	10 0 0	5 0 0	10 2 6
		Woolwich Consms.			
		Woolwich (North)			
		Wymondham.....			
795	20	Yarmouth.....	20 0 0	5 0 0	17 to 18
		Yeadon, near Leeds			
140	30	Yeovil	30 0 0	5 0 0	30 0 0
	5	*Fork Untd.* £55,000	5 0 0	6 0 0	7 10 0

SCOTLAND.

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£		£ s. d	£ s. d	£ s. d
13,000	5	Aberdeen	3 11 0	7 0 0	4 11 6
420	10	Airdrie	10 0 0	7 10 0	12 10 0
		Alloa			
		Annan			
1300	1	Anstruther.....	1 0 0	7 10 0	1 2 0
100	20	Ardrossan	20 0 0	4 0 0	20 0 0
550	20	Arbroath	20 0 0	7 10 0	30 0 0
381	5	Auchterarder.....	5 0 0	7 10 0	7 0 0
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
2666	5	Ayr, old	5 0 0	6 0 0	6 0 0
2500	2	Ditto, new.....	2 0 0	6 0 0	2 0 0
250	10	Banff	10 0 0	9 10 0	10 12 6
		Barrhead			
		Bathgate.....			
		Beith.....			
1000	1	Bervie	1 0 0		1 0 0

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£		£ s. d	£ s. d	£ s. d
		Biggar			
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0
400	6	Borrowstowness	6 0 0	5 0 0	8 0 0
540	5	Brechin	5 0 0	8 10 0	9 0 0
		Bridge of Allan			
2250	2	Broughty Ferry	2 0 0	6 0 0	2 2 0
		Burntisland			
		Campbelton			
		Carluke (Lanark)			
		Clackmannan			
1333	3	Coatbridge	3 0 0	10 0 0	4 0 0
		Coldstream			
		Collinsburgh			
		Comrie			
2744	1	Crieff	1 0 0		1 0 0
		Crail, Fife			
600	1	Cullen	1 0 0	5 0 0	15 0
		Cumbernauld			
200	6	Cumnock	6 0 0	5 0 0	6 0 0
600	5	Cupar Angus	5 0 0	7 0 0	7 3 0
350	10	Cupar Fife	10 0 0	7 10 0	15 0 0
		Dalkeith			
750	2	Denny			
		Dingwall			
		Dornoch			
500	1	Douglas	1 0 0	6 0 0	1 1 0
		Dufftown			
		Dumbarton			
400	70	Dumfries	70 0 0	5 0 0	70 0 0
		Dunbar			
560	2½	Dunblane	2 10 0	4 0 0	2 10 0
	23⅓	*Dundee*, old £29,687	23 15 0	8 8 0	30 16 0
8000	5	*Dundee, new*	5 0 0	4 0 0	3 17 6
860	10	Dunfermline	10 0 0	7 10 0	15 0 0
		Dunkeld			
1000	2	Dunoon	2 0 0		2 0 0
		Dunse			
250	5	Dysart	5 0 0	7 10 0	6 0 0
6000	25	*Edinburgh Gas Co.*	25 0 0	10 0 0	52 0 0
5480	25	,, *and Leith Co.*	25 0 0	10 0 0	53 0 0
		Elie			
455	11¼	Elgin	11 10 0	6 0 0	11 10 0
		Falkirk, old			
		,, new			
		Falkland			
		Ferry Port on Craig			
600	1	Fochabers	1 0 0		1 0 0
1440	5	Forfar	5 0 0	7 10 0	7 19 0
		Fort William			
2000	16s.	Fraserburgh	16 0	5 0 0	16 0
500	5	Galashiels	5 0 0	10 0 0	9 10 0
		Garlieston			
		Gatehouse n. Fleet			
900	2½	Girvan	2 10 0	6 0 0	2 10 0
6000	25	*Glasgow*	25 0 0	10 0 0	52 10 0
15000	10	*Glasg. City & Suburb.*	10 0 0	10 0 0	20 10 0
		Grangemouth			
		Grahamston			
	8½	Haddington	8 10 0	7 10 0	12 10 0
1600	5	*Hamilton*	5 0 0	10 0 0	6 10 0
440	5	Hawick	5 0 0	7 10 0	7 10 0
300	5	Helensburgh	5 0 0	7 10 0	7 10 0
1312	1	Huntly	1 0 0	7 10 0	1 1 0
250	5	Inverary	5 0 0	10 0 0	6 12 6
425	1	Inverkeithing	1 0 0	5 0 0	1 0 0
1200	10	*Invern. Gas & Water*	10 0 0	7 0 0	14 0 0
2400	5	,, new shares	1 5 0	7 0 0	2 0 0
310	10	Irvine	10 0 0	10 0 0	15 0 0
		Jedburgh			
		Johnstone (Paisley)			
		Keith			
		Kelso		10 0 0	
		Kilmarnock			
339	5	Kincardine	5 0 0	2 10 0	4 5 6
		Kinghorn			
		Kingskettle, Fife			
		Kinross			
120	5	Kirkaldy	5 0 0	10 0 0	8 10 0
320	5	Kirkcudbright	5 0 0	5 0 0	5 0 0
1000	3	Kirkintulloch, near	3 0 0	5 0 0	3 0 0
227	5	Kirkwall... [Glasg.	5 0 0	5 0 0	4 10 0
518	5	Kirriemuir	5 0 0	6 0 0	
		Lanark			
		Largo, near Leven			
280	5	Largs	5 0 0	7 10 0	7 to 8
		Lasswade, n. Edin.			
177	5	Lauder	5 0 0	5 0 0	5 0 0
		Leith			
1879	1	Leslie, Fife	1 0 0	7 10 0	1 8 0
614	1	Lesmahago	1 0 0	6 0 0	1 0 0
1500	1	Leven	1 0 0	5 0 0	1 2 0
100	10	Linlithgow	10 0 0	7 10 0	15 0 0
		Linton, n. Nobleh.			
		Lochee, n. Dundee			
240	5	Lochgilphead	5 0 0	7 10 0	5 5 0
		Lochwinnock, near			
1900	1	Markinch. [Paisley	1 0 0	7 10 0	1 5 0
282	3	Mauchline [Dumf.	3 0 0	5 0 0	3 0 0
		Maxwell-town, n.			
423	5	Maybole, Ayrshire	5 0 0	4 10 0	5 0 0
		Maryhill, n. Glasg.			
373	2	Melrose	2 0 0	7 10 0	2 0 0
718	2	Mid & East Calder	2 0 0		2 0 0
200	5	Moffat	5 0 0	5 0 0	5 0 0
400	20	Montrose	20 0 0	10 0 0	35 0 0
		Musselburgh			
618	1	Nairn	1 0 0	5 0 0	1 0 0
		Neilston, n. Glasg.			
1056	1	Newmills, near Kilmarnock	1 0 0	5 0 0	1 0 0
		Newburgh, Fife			
		Newton-on-Ayre			
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0
		North Berwick, NB			
		North Queensferry			
245	5	Oban	5 0 0	7 10 0	5 0 0
194	5	Peebles	5 0 0	5 0 0	5 0 0
800	25	Perth	25 0 0	4 16 0	22 10 0
	5	,, new	5 0 0	2 10 0	4 5 6
		Peterhead			
		Pittenweem			
2416	1	Pollokshaws, n Glsg	1 0 0	7 10 0	1 5 0
		Port Glasgow			
		Portobello, n. Edin.			
200	5	Prestonpans	5 0 0	6 0 0	5 0 0
1500	1½	Rutherglen, n Glasg	1 6 8	5 0 0	1 6 8
		Renfrew, n. Paisley			
		Saltcoats			
951	1	Sanquhar	1 0 0	5 0 0	1 0 0
		Selkirk			
448	12	St. Andrew's	12 0 0	6 0 0	14 0 0
200	8	Stewarton	8 0 0	5 0 0	8 0 0
7330	2	Stirling	2 0 0	8 0 0	3 0 0
2500	1	Stonehaven	1 0 0	6 5 0	1 6 0
		Stonehouse, Lanrks.			
600	2½	Stornoway	2 10 0		2 15 0
420	5	Stranraer	5 0 0	7 10 0	5 to 5½
604	2	Strathaven, near	2 0 0	8 0 0	2 15 0
643	2½	Thurso... [Hamltn	2 10 0	4 0 0	2 10 0
		Tillicoultry, n. Alloa			
800	1	Tranent	1 0 0	5 0 0	1 0 0
		Troon			
		Wick			
		Wigton [haven			
2051	1	Wemyss and Buck-	1 0 0	6 0 0	1 2 0

IRELAND.

Number of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share	Dividend per Cent. per Ann.	Price.
	£		£ s. d	£ s. d	£ s. d
		Ardee			
	10	Armagh	10 0 0	10 0 0	20 0 0
		Ballinasloe			
		Bangor (co. Down)			
700	80	*Belfast*	80 0 0	7 10 0	80 0 0
51	5	Ballymena	5 0 0	10 0 0	
		Ballymoney			
150	5	Ballynahinch	5 0 0		5 0 0
		Castlebaney			
		Carrickfergus			
1100	5	Carlow	5 0 0		4 10 0
400	5	Cavan	5 0 0		5 0 0
		Cork (see Un. Gen.)			
		Cookstown			
1300	5	Clonmel Consumrs	5 0 0	5 0 0	5 0 0
		Drogheda			
19,000	10	*Dublin Consumers*	6 0 0	7 0 0	8 10 0
		Dublin Hibernian			
160	25	Dundalk [see U.G.	25 0 0	5 0 0	25 0 0
200	10	Dungannon	10 0 0	7 10 0	12 10 0
871	5	*Downpatrick*	5 0 0	4 0 0	0 0
		Enniskillen			
		Enniscorthy			
240	25	Galway	25 0 0	10 0	37 10 0
		Keady			
400	10	Kilkenny	10 0 0	8 0 0	11 5 0
		Killarney			
		Larne			
		Limerick (see U.G.)			
1725	5	Limerick Consum.	5 0 0		
		Lismore			
600	15	Londonderry	15 0 0	6 13 4	21 0 0
		Louth			
500	7	Lisburn	7 0 0	7 10 0	8 5 0
530	10	Lurgan	6 0 0	6 0 0	6 0 0
		Mallow			
		Monaghan			
		Nenagh			
448	5	Newtownards	5 0 0	6 0 0	6 15 0
		Newtownlimavady			
750	20	Newry	20 0 0	5 0 0	20 0 0
425	5	Omagh	5 0 0	10 0 0	6 0 0
125	20	Portadown	20 0 0	5 0 0	20 0 0
		Portaferry			
900	10	Sligo	10 0 0	6 0 0	10 0 0
		Tralee			
		Waterford			

The Gas Works in the undermentioned towns belong to private individuals:—

Abergavenny.	Chester (Roodee).	Fermoy.	Huntingdon.	Oswestry.	Sheerness.	Ware. (2 works)
Barnet.	Chertsey.	Gainsborough.	Kelseden	Parsonstown.	Sidmouth.	Wem.
Blaydon, n. Newcastle.	Crewkerne.	Goole.	Leiston (Suffolk).	Peterborough.	Sittingbourne.	Wexford.
Bridgenorth.	Dartmouth.	Harleston.	Lynn.	Pontypool.	Spalding.	Weymouth.
Brompton & Gillingham	Eltham.	Hertford.	New Ross.	Rye.	Tipperary.	Whitchurch (Salop).
Bungay.	Ely.	Holt.	Northfleet.	Sandwich.	Waltham Abbey.	Wisbeach.
Carnarvon.	Farsley.	Hunmanby.	Newport I. W. (new).	Seaham Harbour.		

The Gas Works belong to the Corporations, or to Commissioners acting under special acts of Parliament, in the following towns:—

Athlone	Coleraine.	Keighly.	Manchester.	Richmond (Yorkshire).	Southport	Trim (Meath).
Beverley.	Doncaster.	Kells (Meath)	Milton (Kent).	Rochdale.	Stockport	Walsall.
Blackpool.	Great Malvern.	Knaresborough.	Oldham.	Rothesay.	Strabane.	Wells (Norfolk).
Carlisle.	Greenock.	Leek.	Paisley.	Salford.	Teignmouth.	Youghall.
Cashel.	Haverfordwest.	Lytham (Lanc.)				

Price Current.

CASTINGS, per Ton.

Average Weight of Cast Iron Gas Pipes, per Yard.

1½ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lbs.

Retail Prices are 5 to 10 per cent. higher.

	London.	Glasgow	Newcastle.	Wales.	Yorksh., Derbysh. and Staffdsh.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Pig Iron, No. 1	5 0 0	4 5 0	4 10 0	4 10 0	4 10 0
1½ and 2 inches Socket Pipes	8 15 0	7 15 0	8 0 0	8 0 0	8 0 0
2½ and 3 do. do.	8 10 0	7 10 0	7 15 0	7 15 0	7 15 0
4 and 5 do. do.	8 5 0	7 5 0	7 10 0	7 10 0	7 10 0
6 inches and upwards do.	8 0 0	7 0 0	7 5 0	7 0 0	7 5 6
Retorts, 1st fusion, hot blast	7 15 0	...	7 15 0	...	7 10 0
Do. 2nd fusion, cold blast	8 10 0	...	8 0 0	8 0 0	8 0 0
Tank Plates, ⅛ thick and above	9 0 0	7 10 0	8 10 0	7 10 0	9 0 0

COALS.

NEWCASTLE.	s.	d.		SCOTCH CANNEL.		
Unscreened	7	6	per ton.	Boghead at Leith	28 0	,,
Whitwell Primrose	7	6	per ton.	Kirkness best	23 0	,,
Pelton	8	0	,,	Capeldrae, first quality	20 0	,,
Medomsley	8	0	,,	Ditto, second quality	12 6	,,
Pelaw	8	3	,,	Lesmahago at Glasgow	25 0	,,
Burnhope				Ditto at Leith	27 6	,,
Eighton Moor				Arniston	22 0	,,
New Pelton	8	6	,,	Wemyss (at the pits)	16 0	,,
Peareth				Bridgeness	17 0	,,
South Pelaw				Kinneil		
Washington Hutton				Knightswood	18 0	,,
South Peareth				Lochgelly	12 6	,,
Ramsay's Cannel	18	0	,,	Lumphinan		
Cowen's Cannel	18	0	,,	Methill	11 0	,,

FIRE GOODS.	LEAD.
Best Bricks, 60s. per 1000, at Newcastle.	Soft pig, £25 to £26 per ton.
Do. Clay, 12s. per ton do.	

WROUGHT IRON TUBING, subject to 35 per cent. Discount.

	2 inches.	1½ inch.	1¼ inch.	1 inch.	¾ inch.	½ inch.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent welded tubes, from 2 to 12 feet, per foot	1 8	1 0	0 10	0 7	0 5	0 4½
Ditto ... ,, 6 in. to 18 in., each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting pieces, or long screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, springs, and elbows, wrought iron	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, wrought or cast	4 6	3 0	2 6	2 0	1 6	1 2
Iron cocks	17 6	9 6	7 6	4 6	3 3	2 6
Ditto, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing sockets, caps, plugs, and nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2 quart	15 0	14 0	13 6	13 0	12 0	

FREIGHTS, per Ton.

Coastwise—Newcastle.	s. d.	*Foreign.*	s. d.
Chatham & Roches.	8s. 0d	Boulogne	11s. 0d
Cork	12 0	Barcelona	30 0
Dover	9 0	Bordeaux	20 6
Dublin	14 6	Cadiz	17 0
Exeter Quay	11 3	Calais	11 0
Folkestone	8 3	Dieppe	14 0
Hastings	10 0	Genoa	30 0
London	8 9	Hamburg	14 0
Lowestoft & Yarmth	6 0	Havre	14 0
Lynn	7 6	Leghorn	30 0
Portsmouth	10 6	Lisbon	17 0
Plymouth	11 3	Rotterdam	13 6
Whitstable	8 6	Stettin	16 0
Weymouth	10 0	Trieste and Venice	35 0

LESMAHAGO GAS COAL.

JAMES FERGUSON and CO., Lessees of the Auchinheath and Craignethan Gas Coal-fields (the most extensive and valuable in the parish of Lesmahago), respectfully intimates to the Managers of Gas Works and Consumers of Gas Coal, that he is prepared to ship the best quality of the above well-known COALS at Glasgow or Leith; and also to deliver them at the railway stations upon, or connected with, the Caledonian Railway, to any extent which may be required.

Price, free on board, or delivered at the railway stations, may be learned by addressing James Ferguson and Co., Gas Coal Works, Lesmahago; or J. H. Jones, 1, Poets'-corner, Westminster, sole Agent for London.

EDWARD RUSSELL,
ALMA TUBE WORKS,
WALSALL.

Manufacturer of Wrought-iron Tubing, for Gas, Steam, and Water; Stocks, Taps, and Dies, and all kind of Gas Fittings.

GREAT EXHIBITION PRIZE MEDAL,
AND CERTIFICATE FOR GAS METERS,
CLASS XXII., No. 424.

PADDON AND FORD,
PATENT GAS METER & APPARATUS WORKS,
GRAY'S-INN-ROAD, LONDON,

Manufacturers of WET and DRY GAS METERS, STATION METERS, GOVERNORS, EXPERIMENTAL APPARATUS, GAS STOVES, LANTERNS, Iron Barrel and Fittings, Main Cocks, &c. &c.

Contractors for the erection or alteration of Gas Works; and every description of Apparatus required in Gas Works supplied. Competent men sent into the Country, and References given to work done.

PADDON and FORD are enabled, from the successful character of their workmanship and material, to guarantee the accuaracy and durability of their meters, either WET or DRY, for a stated period.

TO GAS COMPANIES.

J. W. GRAZEBROOK,
75, OLD BROAD STREET, LONDON,

Having applications for New and Second-hand Gas Apparatus, would be obliged by those Companies having Apparatus to dispose of, to send particulars. And Companies requiring Apparatus are solicited to apply.

PIPES, RETORTS, TANKS, GASHOLDERS, &c.
on Shortest Notice.
STOURBRIDGE and NEWCASTLE FIRE GOODS.
CONTRACTS TAKEN.

GEORGE and SAMUEL CUTLER,
GASHOLDER MAKERS,
No. 8, WENLOCK-ROAD, CITY-ROAD,
LONDON.

Contracts for Tanks, Gasholders, Roofs, Purifiers, and all descriptions of Gas Apparatus executed on the most reasonable terms. Improved Slide Valves, Steam, and Range Boilers, and Smiths' Work, of the best materials and workmanship.

TO GAS COMPANIES.

THE BRYMBO COMPANY,
NEAR WREXHAM,

Manufacture Cold Blast Retorts and Pipes of a very superior quality, and also ship good Gas and Steam Coals at Saltney, on the River Dee, and at Birkenhead.

Brymbo Iron Works and Colliery, North Wales.

London agent, Mr. J. W. Grazebrook, 75, Old Broad-street.

WHITWELL PRIMROSE GAS COAL.—These excellent Gas Coals are wrought from the HUTTON SEAM *only*, and can be shipped either at the South Dock, SUNDERLAND; or Old Harbour, HARTLEPOOL; or Brandling Drops, SOUTH SHIELDS; on application to the WHITWELL COAL COMPANY, Sunderland.

PATENT FIRE-CLAY RETORTS.—O. BROTHERS and COMPANY, Manufacturers of O. Brothers's Patent, beg to state that these Retorts, being made in one entire operation, and in one piece, of any required shape, length, breadth, and height, are not liable to cracks and fissures, of which there is a just and general complaint; and consequently superior to, and cheaper than, any hitherto manufactured.

GREAT REDUCTION IN PRICES—30 per cent. cheaper than any other Clay Retorts manufactured.

Shape.	Sizes.	Length.	Thickness.	Price at Railway Station, Blackburn.	Price per foot run, of any required length, at Blackburn.
		feet.	in.	£ s. d.	s. d.
Dee.....	12 in. by 12 in.	8	2½	2 0 0	5 0
„	14 in. by 12 in.	8	2½	2 8 0	6 0
„	16 in. by 13 in.	8	2½	2 12 0	6 6
„	18 in. by 14 in.	8	2½	3 0 0	7 6
„	19 in. by 13 in.	8	2½	3 0 0	7 6
„	20 in. by 14 in.	9	3¼	3 12 0	8 0
„	24 in. by 15 in.	8	2½	3 16 0	9 6
Round.....	15 in. by 15 in.	8	2½	2 12 0	6 6
„	15 in. by 15 in.	10	2½	3 5 0	6 6
„	18 in. by 18 in.	8	2½	3 4 0	8 0
Oval Retort	18 in. by 12 in.	8	2½	3 0 0	7 6

All other sizes and shapes in proportion, to order.
References and further particulars may be obtained on application to the Patentee, Gas Works, BLACKBURN.

F. & C. OSLER,
44, OXFORD-STREET, LONDON;
Manufactory—Broad-street, Birmingham,
MANUFACTURERS OF GLASS CHANDELIERS, GLASS LUSTRES, TABLE GLASS, &c. &c.

ELEGANT CRYSTAL GLASS CHANDELIERS, FOR GAS

(Made from "REGISTERED" DESIGNS), with GLASS BRANCHES, &c.; suitable for DRAWING-ROOMS and BALL-ROOMS. The more extensive use of GAS in private dwellings has induced Messrs. OSLER to direct their particular attention to the manufacture of this class of articles—which, with a view to their general adoption, are offered at very moderate prices. Purchasers can select from a great variety of patterns, to which additions are being constantly made.

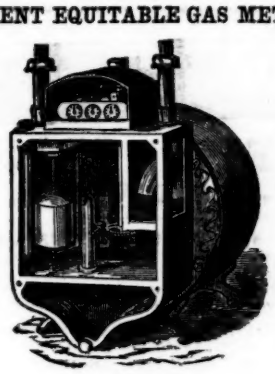
THEATRES, CONCERT, ASSEMBLY, AND BALL ROOMS LIGHTED BY ESTIMATE ON THE LOWEST TERMS.

NOW READY.

VOL. III. of the JOURNAL of GAS-LIGHTING, price 32s. 6d., bound in cloth and lettered. Cloth cases for binding may be had at 2s. 6d. each. G. HEBERT, 88, Cheapside.

By Her Majesty's Royal Letters Patent.

KAY'S
PATENT EQUITABLE GAS METER.



MANUFACTURED BY
WILLIAM COWAN,
BUCCLEUCH STREET, EDINBURGH.

The attention of Gas Companies is respectfully directed to the above important invention in Gas Meters.

The well-known fraud of "tilting" the Meter on one side, to enlarge the capacity of the measuring chambers, or allow the gas to pass unregistered, is entirely prevented by this invention; which simply consists in placing the Outlet on the front of the Meter, and inserting a Dip-tube, which immediately shuts off the gas the instant the Meter is thrown off its level.

Another important advantage in this arrangement of the Outlet is, that the Measuring Wheel is entirely protected from frauds, by being pierced or otherwise tampered with.

The above alteration of the Outlet does not in any way affect the present arrangement of the Fittings, this Meter being adapted to the Fittings at present in use.

SHEARS AND SONS'
PATENT DRY GAS METERS

Are supplied to Gas Companies and the Public as the best and simplest Dry Gas Meters in use. They are acknowledged to be of first-rate workmanship and accuracy of registration.—Shears and Sons continue to supply these Meters on the most favourable terms; and they also manufacture Wet Gas Meters, to which they apply their Patent Indices.

BANKSIDE, LONDON.

ADDISON POTTER,
WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,

Manufacturer of Clay Retorts, Fire Bricks, and every description of Fire Clay Goods.

WHITEHOUSE and CO.,
GLOBE PATENT TUBE WORKS,
WEDNESBURY,

Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the kingdom.

Orders promptly executed.

IMPROVED
SELF-LUBRICATING GAS VALVES,

Used in nearly one hundred gas works in Great Britain and the Continent, and are esteemed for their strength, superior workmanship, non-liability to damage, never sticking, oiling themselves, always working free in tar, lime, or gas, never falling down, and their very legible index of opening of valve—advantages only possessed by these valves.

SELF-REGISTERING GAUGE COLUMN

To regulate the pressure in the Street Mains, showing at one glance the valve on the facing, area of the opening, size of pipe the gas passing will fill, and the pressure on the works and on the mains. This supersedes the necessity of the expense of a governor for small works, and should be placed on the by-pass, where a governor is used in large works. IT IS NEXT TO IMPOSSIBLE FOR THE VALVE MAN TO PUT A TOWN IN DARKNESS WITH THIS APPARATUS, and is a great ornament to the Valve-room.

IMPROVED ANNULAR CONDENSER.

Ensures perfect condensation with smallest weight of iron, and standing on the smallest space, the whole of the parts being instantly accessible. They are in use in various Gas Works, small and large, and passing 20,000 to 600,000 cubic feet per 24 hours.

DRY LIME AND OXIDE OF IRON PURIFIERS.

Perfect simplicity of action and improved Sieves, which are strong and very lasting, and the wires, when worn out, may be replaced in an hour and a half by any handy man in a gas work. The undersigned have made them, and have patterns for every size from 3 feet to 18 feet square.

GASHOLDERS, SCRUBBERS, &c.

CHARLES WALKER AND SONS,
LITTLE SUTTON-STREET, LONDON, AND MIDLAND IRON WORKS, TIPTON, STAFFORDSHIRE.

Applications for Prices, &c., to be addressed to their London Office, as above.

PATENT FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK'S
Vulcanized Indiarubber Hose Pipes and Tubing.
Manufactory (and Warehouse), Goswell-mews, Goswell-road, London.

Gas Companies, Engineers, Gas Fitters, and the Trade generally, are respectfully informed this Tubing is now manufactured to any size, from ¼ inch bore and upwards, in 100-feet lengths, and perfectly cylindrical, either with or without a spiral wire inside.

VULCANIZED GLAZED FLEXIBLE TUBING, from ¼ inch up to 1 inch diameter, made in 24-feet lengths; or, covered with silk or worsted, up to 100 feet.

VULCANIZED HOSE, for FIRE ENGINES, BREWERS' USE, and for standing great pressures, (Rubber and Cloth combined), made to any length or size to fit the necessary screws, &c.

VULCANIZED INDIARUBBER AIR-TIGHT BAGS, made any size, for Gas Mains, with flexible tubes attached, and fitted with stopcocks complete.

CARTER'S PATENT SAFETY GAS VALVES.

THOMAS LAMBERT and SON,
PATENTEES AND MANUFACTURERS,
SHORT STREET, NEW CUT, BLACKFRIARS, LONDON.

The Bank of England is fitted entirely with these Valves, from the smallest branch to the largest main pipe.

The following, among numerous testimonials, will be found very satisfactory:—

"The British Gaslight Company's Office, No. 105, Broad-street, Ratcliff, London, June 10, 1846.

"Gentlemen,—In reply to your inquiry, I have to state that 'Carter's Patent Gas Valve' has been used by this company and by the fitters of the district extensively for seven years past. It was adopted to obviate the inconvenience of setting fast, so prevalent with the conical metal plug-cocks, and has been found to answer the purpose intended.

"I have recommended its use in several provincial towns with which I am professionally connected, and have not received any complaint of its having failed in any respect of performing satisfactorily all that is required of it.—I am, gentlemen, yours respectfully,

"GEDDIE PEARSE.

"Messrs. Lambert and Son, Lambeth."

TO GAS COMPANIES, GAS PROPRIETORS, AND GAS ENGINEERS.

JOHN VICKARY

begs to call the attention of the above to his improved METALLIC CASE GAS-METER, an improvement which has met with entire approbation from the various Gas Companies and Engineers to whom he has introduced it, and acknowledged to be the greatest improvement that has been made since the year 1832; at which period a metal was introduced for the construction of the Drum, Syphon, and Float, capable of resisting any impurities arising from either gas or water, which has been found to answer every expectation; as, in repair, Drums of the above date are found in perfect and good condition, when the Outer Case, Valve-box, Inlet-pipe, &c., are quite destroyed and entirely past repair.

J. V. has introduced a coating or lining of the above metal in the Outer Case, Valve-box, Inlet-pipe, &c., thereby rendering the whole as durable as the Drum, as not a particle of tin plate is exposed to the action of either water or gas; and preventing the possibility of gas passing above the water line through the front into the body of the Case to the outlet unregistered, which frequently occurs. When the Meter has been in use for any length of time it is generally found that rust or decay takes place *above* rather than under the water line, which is only discovered when they need repair. Also the Inlet-pipe and Valve-box are generally found quite decayed, which cannot happen in the above improvement.

J. V. feels confident that the above will be found a most desirable and perfect instrument, as it contains all other improvements of utility that have been introduced up to the present time.

The most strict attention is given to the workmanship as well as the registration of every Meter, to render them perfectly accurate.

Station Meters, Governors, &c., made on the shortest notice, as well as Gas Cooking Apparatus of every description, Gas Baths, &c.

Meters sent at the lowest London prices.

Carriage paid to any part of England.

WEST OF ENGLAND GAS METER AND GENERAL GAS APPARATUS MANUFACTORY, 84, FORE STREET, EXETER.

NEW HOUSES OF PARLIAMENT.

DEFRIES'S Gas Stoves, Ranges, and BATHS, in action for two years at the above building. A great variety in stock upon the same principle. Gas Baths from £7, by which a warm bath may be obtained for 1½d. Gas Cooking and Heating Stoves, from £1. Defries's celebrated Dry Gas Meters —upwards of 60,000 in use.

Testimonials at the Office, 145, REGENT-STREET, or at the Manufactory, NEW-ROAD, St. Pancras, near Fitzroy-square.

HARRIS AND PEARSON,
PROPRIETORS OF
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